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An Assessment of Gelatinous Zooplankton and Impacts on Planktonic Community Structure in Barnegat Bay, New Jersey

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Abstract:

Local populations of gelatinous zooplankton are experiencing increases in response to changes in coastal ecosystems due to anthropogenic forces. The abundance of the Atlantic sea nettle (*Chrysaora quinquecirrha*) has dramatically increased in Barnegat Bay, NJ. Lift net sampling was used to determine the density and distribution of sea nettle and ctenophore (*Mnemiopsis leidyi*) populations, while zooplankton tows were used to compare relationships between their abundance to that of other zooplankton species. Lift net results showed substantial spatial and temporal variability in density and distribution of ctenophores and sea nettles, with these patterns being inversely proportional. *Chrysaora quinquecirrha* was more abundant in north Barnegat Bay while *Mnemiopsis leidyi* was more abundant in the south. Zooplankton tow results showed similar trends on spatial and temporal scales. *Chrysaora quinquecirrha* was collected in southern sample sites, suggesting the expansion of sea nettles in Barnegat Bay. Correlation analysis for the abundance of *Mnemiopsis leidyi* against other zooplankton suggests predation upon copepods, fish eggs, larval fish, crab and shrimp larvae and is indicative of potential top-down structuring forces in the pelagic community. Correlation analysis between *C. quinquecirrha* and *M. leidyi* suggests predation upon the ctenophore species by the scyphozoan.

MONTCLAIR STATE UNIVERSITY

AN ASSESSMENT OF GELATINOUS ZOOPLANKTON AND IMPACTS ON PLANKTONIC COMMUNITY STRUCTURE IN BARNEGAT BAY, NEW JERSEY

by

CHRISTIE L. CASTELLANO

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Introduction

The Gelatinous Zooplankton Paradigm

Research scientists have reported that gelatinous zooplankton (i.e., scyphozoans, hydrozoans and ctenophores) are increasing in coastal ecosystems on a global scale. Shifts in the physical and biological parameters of these systems occur as a result of climate change, introduction of non-native species and anthropogenic alterations to shoreline communities (Condon et al., 2012). These shifts tend to favor an ecological regime in which cnidarians and ctenophores are the dominant species, allowing them to present a unique top-down control of coastal food webs that can cause major shifts in the plankton communities present in these ecosystems (Purcell and Decker, 2005; Richardson et al., 2009). Gelatinous zooplankton are considered problematic in coastal systems since populations grow out of control and there can be significant ecological and economic impacts.

Reports of increasing populations of gelatinous zooplankton are based in a scientifically sound concept referred to as the "bloom phenomena." In certain areas of the world, anthropogenic and environmental perturbations will cause shifts in the ecosystem that will allow populations of gelatinous zooplankton to bloom in large numbers in a very short period of time (Mills, 1995). Increases in nutrient loading leads to high levels of primary production, but often species composition is altered, favoring noxious species. This change in primary producers can disrupt food webs, leading to compromised systems with reduced water quality. Some researchers believe that gelatinous zooplankton blooms are increasing on a global scale and are becoming concerned with the health of the world's oceans in relation to observations of increase in different coastal areas (Figure 1).

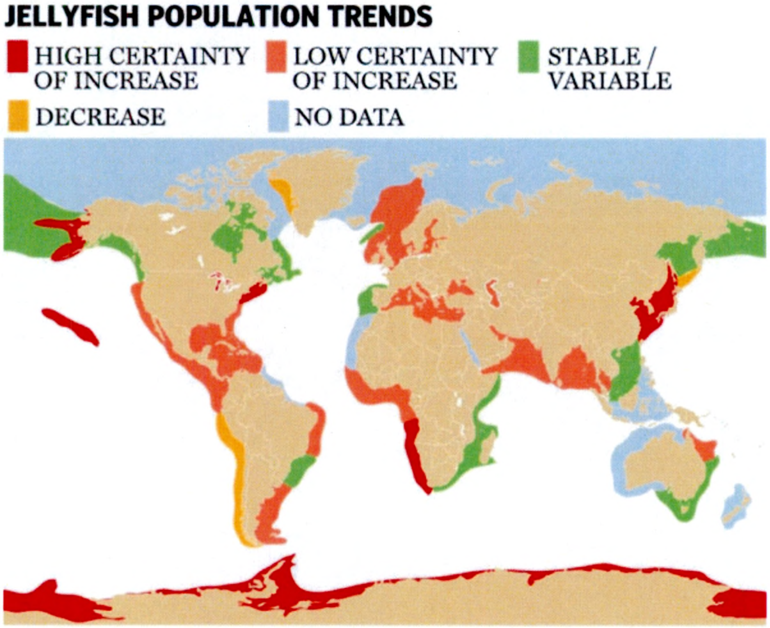

Figure 1. Global map of jellyfish population trends (Brotz et al., 2012).

However, those considering this sudden expansion and growth of gelatinous zooplankton around the world's oceans have begun to question whether or not this is truly a global phenomenon (Condon et al., 2012). Scientists have determined that there are three different types of reports regarding gelatinous zooplankton including those which were showing increases in blooms (see review by Condon et al., 2012), those which found no evidence of unnatural blooms occurring (Daryanabard & Dawson, 2008), those which have shown decreases in the numbers of blooms occurring (Mills, 2001; Brodeur et al., 2008) and those which originally had strong evidence of increasing blooms that later showed declines in bloom intensity and occurrence (see review by Purcell et al., 2007). It is obvious then, that with such variety in scientific reporting that the "nuisance jellyfish" paradigm is much more complicated and intricate than previously thought (see review by Condon et al., 2012). The nature of gelatinous zooplankton population growth must consequently be interpreted on a much smaller scale (i.e.

locally and regionally versus globally) for their accompanying impacts on coastal ecosystems to be properly understood and mediated.

One of the major issues in comprehending the complex nature of the "nuisance jellyfish" paradigm on local and regional scales is a pervasive lack of long-term data regarding the existence of gelatinous zooplankton in many areas that are now reporting problems with sudden overabundances (Condon et al., 2012). While certain local areas do have extensive data on the existence of gelatinous zooplankton (see review by Condon et al., 2012), blooms tend to be highly variable across space and time. Blooms can be episodic and seasonal as well as highly variable from year to year, making it difficult to understand population dynamics within local systems (Mills, 2001). Recently, observational efforts have appeared to be increasing at the local and regional scale. This could present more data and information that may have not been seen in the past due to lack of observational effort (sensu Condon et al., 2012).

A Review of the Abundant Gelatinous Zooplankton in Barnegat Bay. New Jersey

I. *Chrysaora quinquecirrha,* the Atlantic Sea Nettle

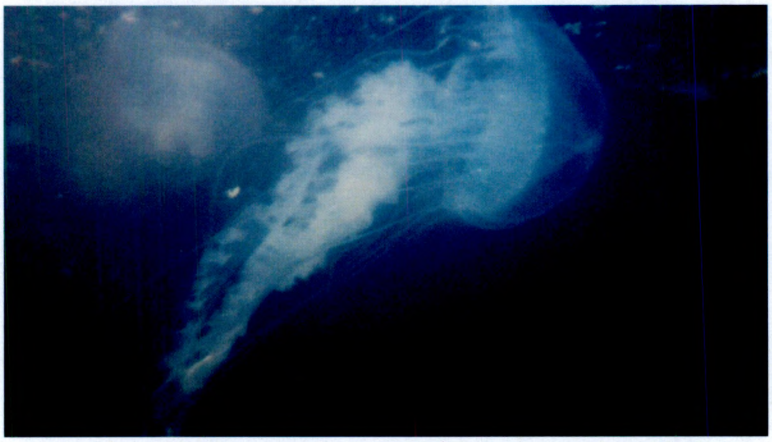

Figure 2. *Chrysaora quinquecirrha* caught during field sampling.

a. Taxonomy/General Description

Animalia, Cnidaria (Hatscheck, 1888), Medusozoa, Scyphozoa (Götte, 1887), Discomedusae, Semaeostomeae, Peagidae (Gegenbaur, 1856), *Chrysaora* (Péron and Lesueur, 1809) (formerly known as *Dactylometra* (Littleford, 1939)), *Chrysaora quinquecirrha* (Desor, 1848)

Chrysaora quinquecirrha is a species of the Scyphozoan class of Cnidarians. The medusa of this species is a bell-shaped, radially symmetrical invertebrate whose body is made up of an outer epidermal cup and a layer of mesoglea around a gastrodermal layer. They are typically opaque white in color, but some have been found to have red or pink dots or streaks visible in the bell and tentacles of the organism. The bell of the medusa can get up to 250 mm in diameter. The bell of *C. quinquecirrha* has 8 scalloped lobes which make up the umbrella of the organism, each to which 5-7 tentacles lined with stinging nematocysts are attached. *Chrysaora quinquecirrha* also has four oral feeding arms which extend from the middle of the umbrella (Kramp, 1961).

b. Life Cycle

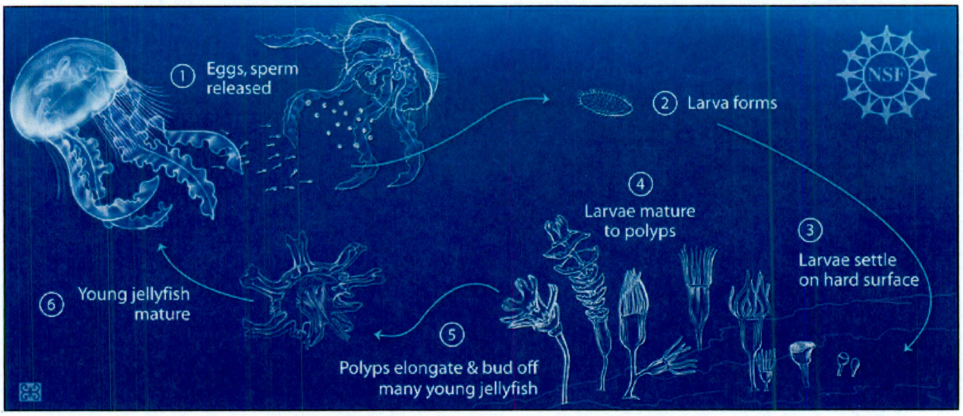

Figure 3. Typical scyphozoan life cycle
(https://www.nsf.gov/news/special_reports/jellyfish/jelly_life.pdf).

Chrysaora quinquecirrha has a bi-phasic life cycle which includes a medusa and a polyp stage. This allows the organism to reproduce both sexually and asexually (Calder, 1972). During the medusa stage, male and female *C. quinquecirrha* produce gametes for sexual reproduction. Once fertilization occurs, planula larvae are formed and begin to settle on hard substrates over the course of 3-5 days (Cargo and Schultz, 1966). Once the planula larvae settle, they metamorphose into the polyp form of the organism, attaching themselves to a substrate with an adhesive substance. The polyp has a short, stalk-like body with 16 tentacles coming from a cup shaped end turned up into the water column (Littleford, 1939; Calder, 1972). Once all 16 tentacles have formed on the mature polyp, it is referred to as a scyphistoma. Polyps are capable of reproducing asexually through budding, stolon formation and longitudinal fission (Adler & Jarms, 2009). Polyps are also capable of forming a cyst for protection and survival (Purcell et al., 1999). In favorable conditions, the scyphistoma becomes a strobila, causing the organism to divide horizontally and release the next form of its life cycle, the free-floating ephyra (Cargo & Rabenold, 1980). Ephyrae have nematocysts on their arms, but have no tentacles. Over the course of 4-5 days, the ephyra begins to develop tentacles; once present, the organism is now referred to as a juvenile medusa (Littleford, 1939). Juvenile medusae continue to grow into adult medusae of *C. quinquecirrha* capable of sexual reproduction and starting the cycle over again.

c. Preferable Habitat

Chrysaora quinquecirrha can typically be found in mesohaline environments, thriving around 10-16 ppt (Decker et al., 2007). It is capable of tolerating salinities as low as 5 ppt, allowing for its success in areas of lower salinity such as tidal rivers occurring within estuarine systems (Decker et al., 2007).

Chrysaora quinquecirrha thrives during summer months in coastal areas with temperatures ranging from 25-31°C (Decker et al., 2007). Medusae have success in these warmer temperatures during July and August (Purcell, 1992); however, research has shown that ephyrae production can begin at temperatures as low as 17°C (Purcell & Decker, 2005). These organisms are also capable of surviving in environments with low dissolved oxygen, increasing their reproductive potential even in hypoxic areas of estuarine systems. Polyps of *C.*

quinquecirrha have shown survival in the lab at oxygen levels as low as 1.5 mg/L and even for short periods as low as 0.5 mg/L (Condon et al., 2001).

Chrysaora quinquecirrha polyps tend to settle on natural hard substrates such as clam and oyster shells as well as rocks that may be present in estuarine systems. As construction and the hardening of coastal shoreline has occurred over the years, polyps of several cnidarian species have been found to settle on many boat docking systems and bulkheads, preferring plastic substrate to rubber or treated wood surfaces (Holst & Jarms, 2006).

d. Feeding Habits

Chrysaora quinquecirrha polyps feed on a large variety of plankton using nematocysts that are present in their tentacles (Loeb & Blanquet, 1973). The ephyrae feed on smaller organisms such as rotifers (Johnson & Allen, 2005). Adult *C. quinquecirrha* feed on copepods, polychaetes, fish eggs and larvae using their tentacles, as well as four specialized feeding arms that are also lined with nematocysts (Purcell et al., 1992).

Chrysaora quinquecirrha is known to feed on several ctenophore species, especially *Mnemiopsis leidyi*, with significant evidence occurring in Chesapeake Bay (Kreps et al., 1997). This predator-prey interaction can have a large impact on the zooplankton community in estuarine areas, allowing *C. quinquecirrha* to exhibit top-down control over ctenophore populations and lessening the impact of *Mnemiopsis leidyi* on other zooplankton species (Purcell et al., 1991; Matanowski et al., 2001).

II. *Mnemiopsis leidyi,* the Leidy Comb Jelly

Figure 4. *Mnemiopsis leidyi* caught during field sampling.

a. Taxonomy/General Description

Animalia, Ctenophora, Tentaculata, Lobata, Mnemiidae, *Mnemiopsis*, *Mnemiopsis leidyi* (A. Agassiz, 1865)

Mnemiopsis leidyi is a species of the Tentaculatan class of Ctenophores. This species has a modified radial symmetry that is based upon two planes of its body form. Adult individuals can be up to 100 mm long. Larval individuals are equipped with tentacles which are lost and replaced by two long, flattened lobes that extend from the spheroid upper portion of the body. Within the organism, eight rows of comb-like cilia beat in order to provide locomotion and prey capture. Unlike Cnidarians, Ctenophores, such as *Mnemiopsis leidyi,* lack stinging cells. *Mnemiopsis leidyi* contains a digestive cavity within its body; however, there are no other developed organ systems within the organism (Gosner, 1971).

b. Life Cycle

Mnemiopsis leidyi does not have a sessile polyp phase. Adults are hermaphroditic and fertilization occurs in the water column. Eggs that have been fertilized develop into small ciliated larvae, then a second larval stage resembling closely the body plan of the adult individual (Johnson & Allen, 2005).

c. Preferable Habitat

Mnemiopsis leidyi tends to be one of the most prevalent macrozooplankton in estuarine systems in the summer months (Mountford, 1980; Johnson & Allen, 2005). *Mnemiopsis leidyi* has been found in salinities ranging from 4-38 ppt and temperatures ranging from 4-32°C (Javidpour et al., 2006).

d. Feeding Habits

Lacking full tentacles, adult *Mnemiopsis leidyi* capture their prey using mucus secreted from the lining of their lobes as water is pushed through by their ciliated combs (Johnson & Allen, 2005). Larval *M. leidyi* use tentacles to feed on copepods, as well as other small ciliate organisms. Adult *M. leidyi* are voracious predators, feeding upon copepods, fish eggs and larvae, and the larvae of barnacles and bivalves (Johnson & Allen, 2005). Previous studies have shown that these organisms are capable of clearing between 45-100% of copepod standing stock per day in Chesapeake Bay (Purcell & Decker, 2005) as well as 65% of fish egg standing stock per day (see review by Purcell & Arai, 2001).

Mnemiopsis leidyi is preyed upon by *C. quinquecirrha*, butterfish, other ctenophores and the cnidarian *Cyanea capillata* (Johnson & Allen, 2005).

Potential Impacts of Gelatinous Zooplankton in Barnegat Bay, New Jersey

The relative abundance of gelatinous zooplankton are changing worldwide as a result of climate shifts, species introductions and anthropogenic alterations to shoreline communities that now favor these organisms (Purcell & Decker, 2005; Richardson et al., 2009). While blooms of gelatinous zooplankton have been occasional and episodic in the past, they are becoming more frequent. In recent years, sea nettles have become established in Barnegat Bay, NJ. There are two potential reasons for this increase in abundance: coastal eutrophication and habitat modification occurring in the bay (Bologna, 2011).

Eutrophication in Barnegat Bay is a driving force behind the relatively hypoxic conditions occurring especially in the northern portion of the bay (Chizmadia et al., 1984) for which jellyfish are very tolerant. Other aquatic organisms which would normally be a part of the local community may be unable to tolerate reduced water quality, and those which are prey species of jellyfish become easier to catch, increasing the energy intake of gelatinous zooplankton (Purcell et al., 1999).

The construction of hard surfaces and other modifications to the shoreline of Barnegat Bay is another important driver in the increased abundance of sea nettles. In recent decades, Barnegat Bay has seen a dramatic increase in development, especially in the north (Figure 5). Structures such as docks and bulkheads can provide suitable habitat for the settlement and success of many jellyfish species' polyp stages (see review by Purcell et al., 2007). It is also probable that *C. quinquecirrha* polyps overwinter on these structures, generating the next group of adults the following spring. These changing conditions in Barnegat Bay contribute to the ability of jellyfish to proliferate.

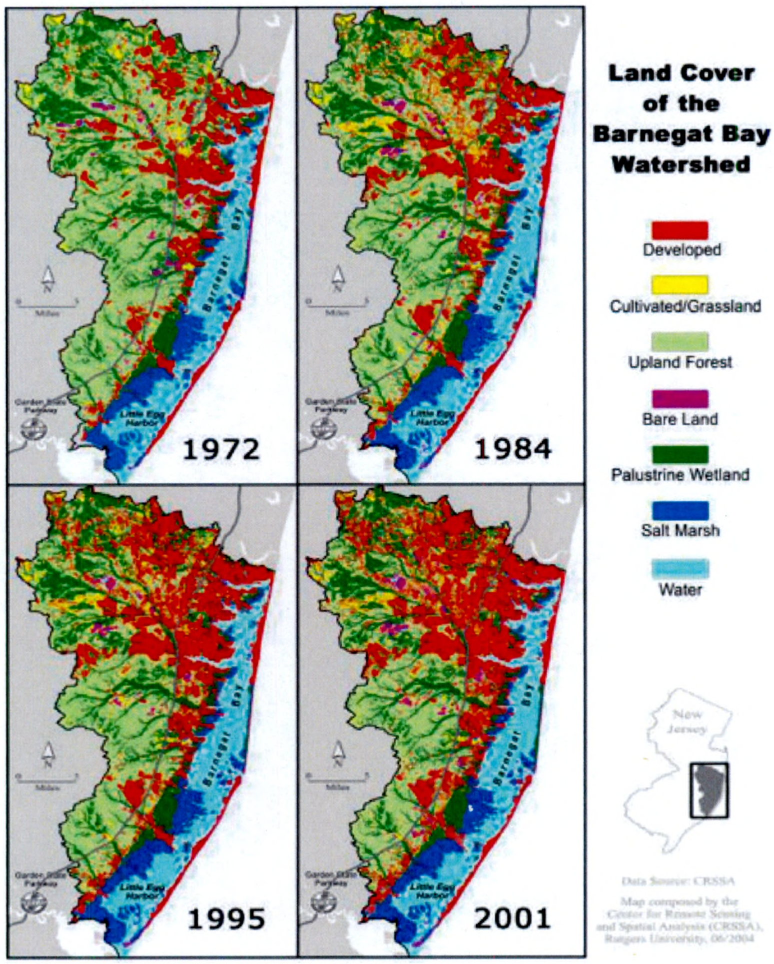

Figure 5. Land cover in Barnegat Bay (Barnegat Bay Partnership)

The increase in jellyfish abundance presents potential ecological and economic problems for Barnegat Bay. In the years prior to the establishment of a resident population of *C. quinquecirrha*, *M. leidyi* was the dominant gelatinous predator within the system (Mountford, 1980). Barnegat Bay's pelagic food web consisted of microzooplankton such as copepods, which made up 65-75% of the annual microzooplankton density from 1975-1977, and cladocerans, as well as the larvae of polychaetes, bivalves, gastropods and barnacles (Sandine, 1984). The food web also included macrozooplankton such as shrimp and crab larvae, amphipods, hydrozoans and polychaetes. Icthyoplankton of several fish species were also a major portion of Barnegat Bay's food web (Sandine, 1984). Impacts of *C. quinquecirrha* on the food web structure in Barnegat Bay following the establishment of its resident population must be examined in order to determine the consequences of a gelatinous zooplankton-dominated system.

There is great concern for human interaction with jellyfish species whose sting can cause injury or discomfort for people using the bay. High abundances of *C. quinquecirrha* can lead to beach closings. Shifting energy pathways can decrease the success of recreational and commercial fishing (Brotz et al., 2012). The widely variable diet of jellyfish species can create a situation in which they become the new top predator in place of larger fish species (Condon et al., 2001), allowing for important top down control of the system and this has not previously been investigated in Barnegat Bay.

Barnegat Bay represents a local area where a proper survey of gelatinous zooplankton and their relationship to other planktonic organisms in the system must be observed. It is extremely important that the role of gelatinous zooplankton in this crucial coastal ecosystem is understood in order to properly manage what has become a steadily declining estuarine system (Kennish et al., 2007). Local populations of gelatinous zooplankton have been deemed problematic by the human population, yet very little has been done to understand what larger ramifications a shift towards a more gelatinous zooplankton-dominated ecosystem could have for the health of Barnegat Bay.

Research Objectives

Quantitative data are essential to understand gelatinous zooplankton populations and their impact on the planktonic community structure in Barnegat Bay. It is critical to evaluate the impacts of abundant gelatinous zooplankton such as *C. quinquecirrha* and *M. leidyi* as these species serve as strong top-down predators capable of restructuring food webs within the bay, along with other economic and environmental consequences.

This study completed the following objectives:

1. Assess the spatial and temporal distribution of gelatinous zooplankton in Barnegat Bay, New Jersey.
2. Determine ecological impacts of gelatinous zooplankton on the planktonic community structure in Barnegat Bay, New Jersey.

Methodology

Study Site

Barnegat Bay is a shallow, lagoon-type estuary located off the coast of Ocean County, New Jersey. The 48 km stretch of water is bordered to the west by the coastal mainland and to the east by two barrier islands. There are freshwater inputs to the bay which are fed by several rivers coming off of the mainland: the Metedeconk River, Kettle Creek, Toms River, Cedar Creek, Forked River, Oyster Creek, Manahawkin Creek, Westeconk Creek and Tuckerton Creek. There are tidal inputs from the Pt. Pleasant Canal and Little Egg Harbor, though most exchange of ocean and bay water occurs though Barnegat Inlet (Chizmadia et al., 1984). The exchange of water between the bay and the ocean is relatively small at the inlet, leading to a turnover rate of about 96 tidal cycles over 50 days (Chizmadia et al., 1984). Due to the small size of Barnegat Inlet and the shallowness of the bay in general, there are restrictions on tidal flow, causing an attenuation of tidal energy which minimizes tidal fluctuations, diminishing tidal amplitude as you move further north and south away from the inlet (Chizmadia et al., 1984).

The study involved sampling at 8 paired (N=16) sites, from the Metedeconk River in the north to Tuckerton Creek in the south (Figure 6). Sampling was performed on a bi-weekly basis from early June to mid-September of 2012.

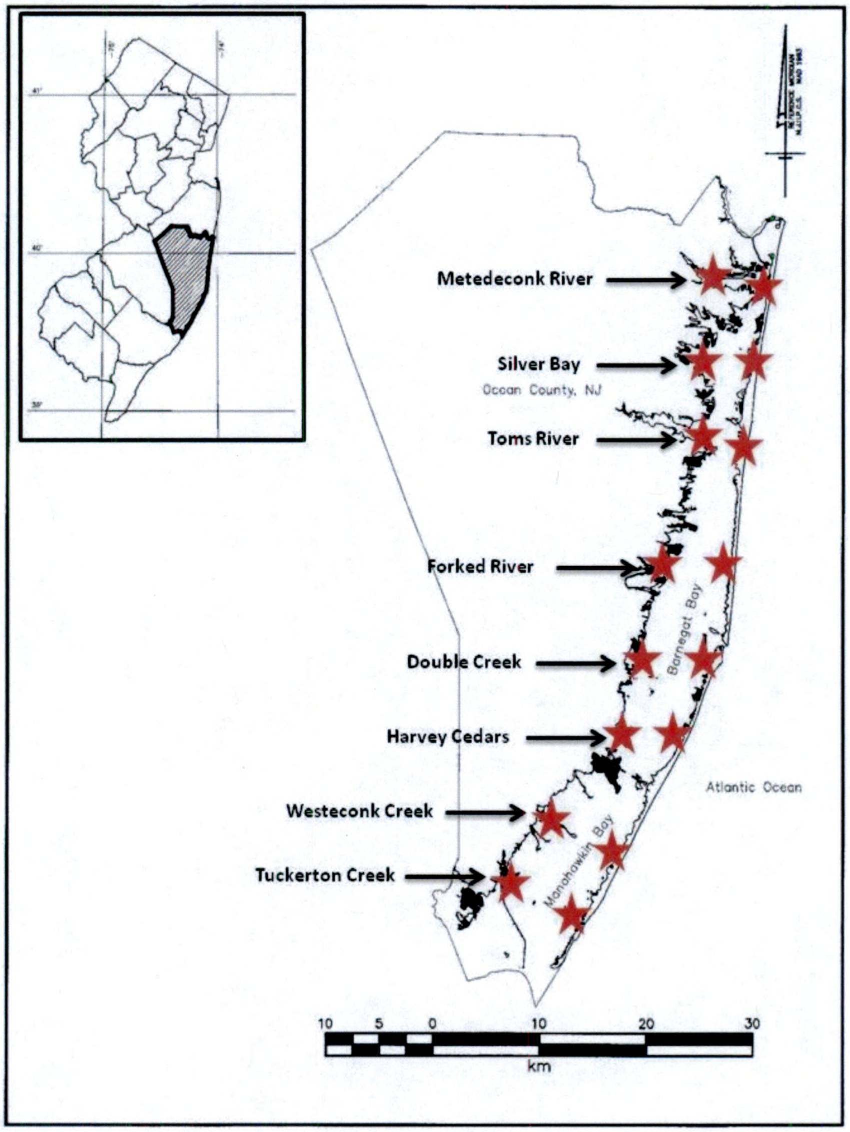

Figure 6. Sampling sites in Barnegat Bay. Each star represents a sampling location, paired east and west at each of the listed sites.

Distributional Assessment of Gelatinous Zooplankton

Mature gelatinous zooplankton are delicate and are often mangled or destroyed when sampling using standard plankton towing methods, so 0.85 m^2 lift nets were employed to sample adult gelatinous zooplankton in Barnegat Bay (Figure 7).

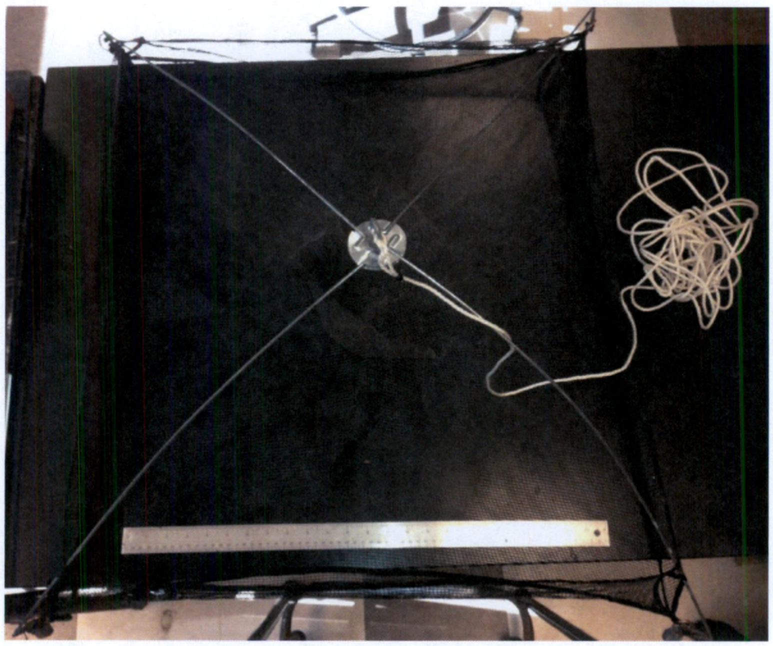

Figure 7. Lift net used for sampling larger zooplankton.

To assess the distribution and abundance of gelatinous zooplankton on spatial and temporal scales, ten lift net samples were taken at each of the 16 sampling sites on a biweekly basis from June-September. The lift nets were tossed into the water and allowed to settle to the bottom and remained there for 30 seconds. The lift nets were then raised up through the water column so that all organisms within the water column were collected. Organisms in each lift sample were transferred to a holding tray where individuals were identified and enumerated. At each of the 16 sites where lift net sampling was performed, the depth of the water was recorded using a depth stick and multiplied by the area of the lift net in order to determine the volume of water which was sampled. All lift net samples were then standardized to #m^3 and compared among sites and collection dates. Salinity, temperature, dissolved oxygen content and dissolved oxygen saturation were also measured using a YSI®-85 during lift net sampling at each site (Figure 8).

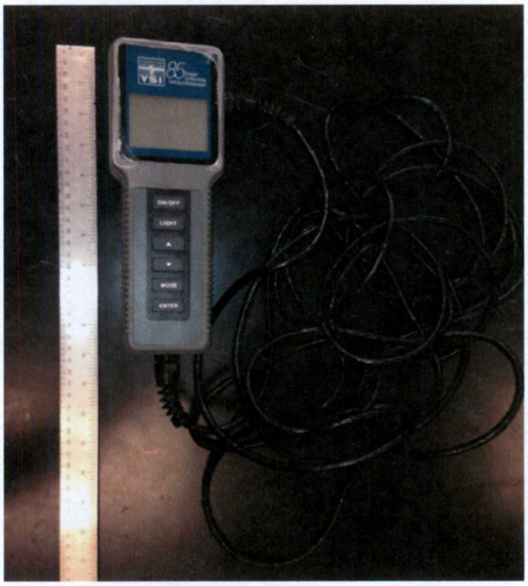

Figure 8. YSI®-85 used to measure water quality parameters during sampling.

Assessment of Planktonic Community Structure

One minute zooplankton tows were performed in triplicate using 363 μm plankton nets at each of the 16 chosen sites in Barnegat Bay (Figure 9).

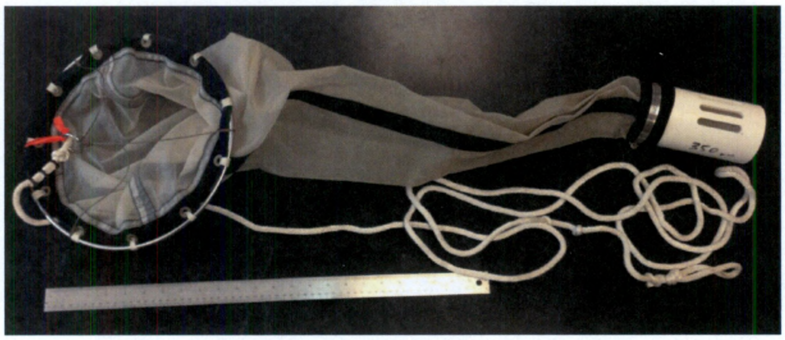

Figure 9. Plankton tow net used for sampling smaller zooplankton.

These plankton tows were performed to determine the distribution and abundance of other zooplankton within the bay, as well as those of juvenile gelatinous individuals. Tows were performed at minimally engaged engine speed and a General Oceanics® Mechanical Flow Meter was placed in the water to determine the distance of the tow (Figure 10). The distance of each tow was recorded and multiplied by the area of the plankton net to determine the volume of water sampled.

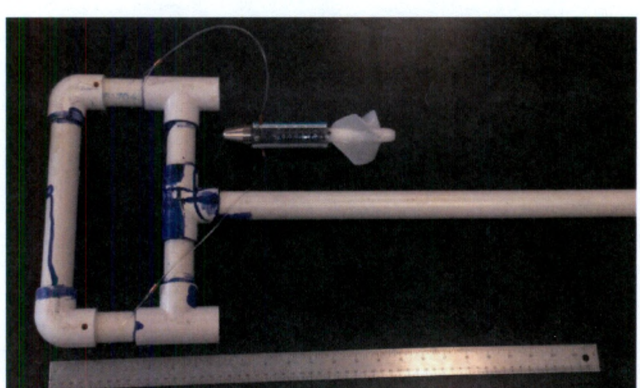

Figure 10. Flow meter (General Oceanics® Mechanical) set up used to determine distances of plankton tows.

Zooplankton collected in each sample were preserved in Ethanol on site and stained with a solution of Ethanol and Sigma-Aldrich® Rose Bengal upon their return to the lab for identification and enumeration. *Mnemiopsis leidyi* individuals were counted on site, as they tend not to preserve well for later identification and enumeration. All zooplankton samples were then standardized for volume of collection to #m^3 and compared among sites and collection dates.

Data Analysis

To analyze differences in the density and distribution of gelatinous zooplankton collected from lift net data, an analysis of co-variance (ANCOVA) was completed. Density of individual species was the dependent variable with sampling site as the independent variable and date of collection as the co-variate in the model. ANCOVA was also used to analyze the differences in density among sites and dates of collection associated with plankton tow samples in the same manner. To assess the relationships among individual taxa, two correlation analyses were conducted. The first used the complete plankton tow data set with each sample independent in the analysis. The second analysis compared the abundance of organisms from the lift net samples.

Results

Water Quality

Overall, salinity was higher in the southern portion of the bay than in the north (Figure 11). Additionally, east and west paired site comparison showed that they had relatively similar salinities. The highest salinity recorded occurred at Tuckerton East on 8/22/2012 (31.3 ppt), while the lowest salinity recorded at Toms River West on 6/28/2012 (15.0 ppt).

Water temperature varied widely across the bay, though most of the southern sites were lower than those in the northern portion (Figure 12). Water temperatures rose towards the middle of the sampling season, and then began to decrease towards the end. The highest temperature occurred at Double Creek West on 7/15/2012 (29.9 °C). The lowest temperature occurred at Tuckerton East on 6/1/2012 (18.6 °C).

Dissolved oxygen content was variable across the bay, though the sample sites near Barnegat Inlet showed the greatest variation across the sampling season (Figure 13). The highest dissolved oxygen content was observed at Double Creek East on 7/15/2012 (11.09 mg/L). Seven of the measured dissolved oxygen values were below 5 mg/L: Forked River West (4.7 mg/L on 7/30/2012), Harvey Cedars West (2.78 mg/L on 7/11/2012; 4.75 mg/L on 7/30/2012), Double Creek West (4.23 mg/L on 8/21/2012) and Westeconk West (4.41 mg/L on 6/26/2012; 4.85 mg/L on 7/30/2012; 4.58 mg/L on 8/22/2012).

The average dissolved oxygen saturation was highly variable across the bay, however sample sites closer to Barnegat Inlet varied more than those further north or south across the sampling season (Figure 14). The highest dissolved oxygen saturation occurred at Double Creek East on 7/15/2012 (168.7%). The lowest dissolved oxygen saturation was observed at Double Creek West on 8/22/2012 (61.0%).

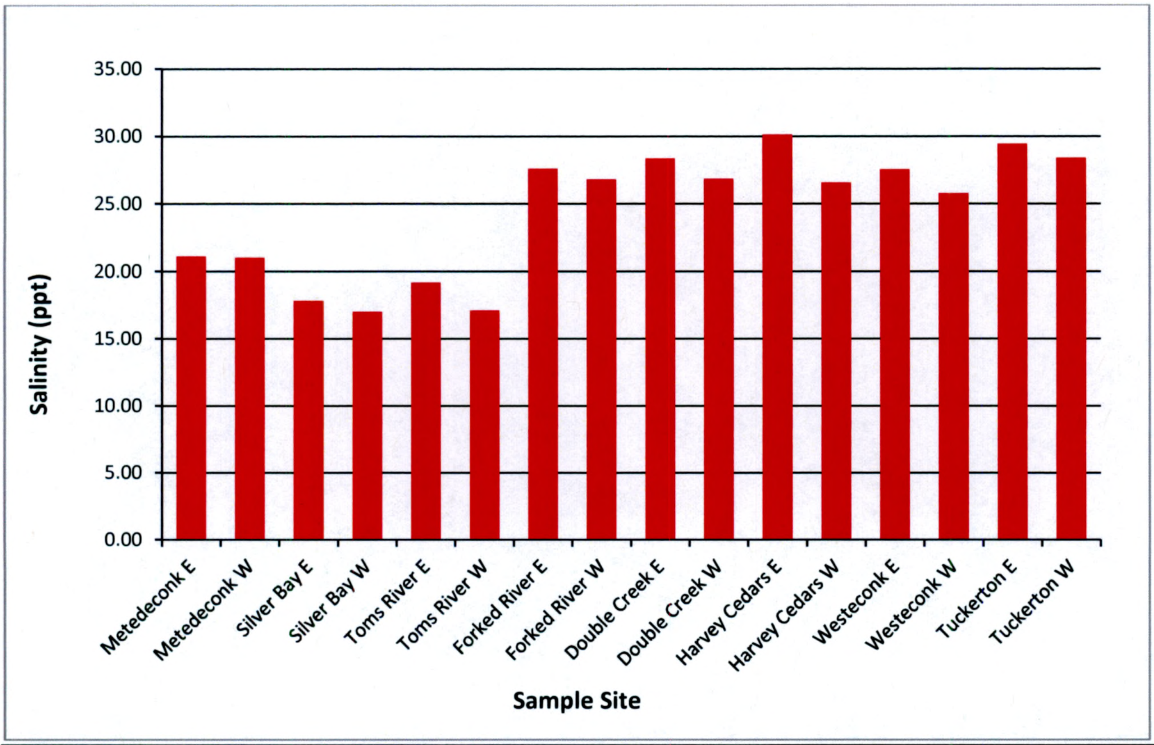

Figure 11. Average salinity values for sampling sites.

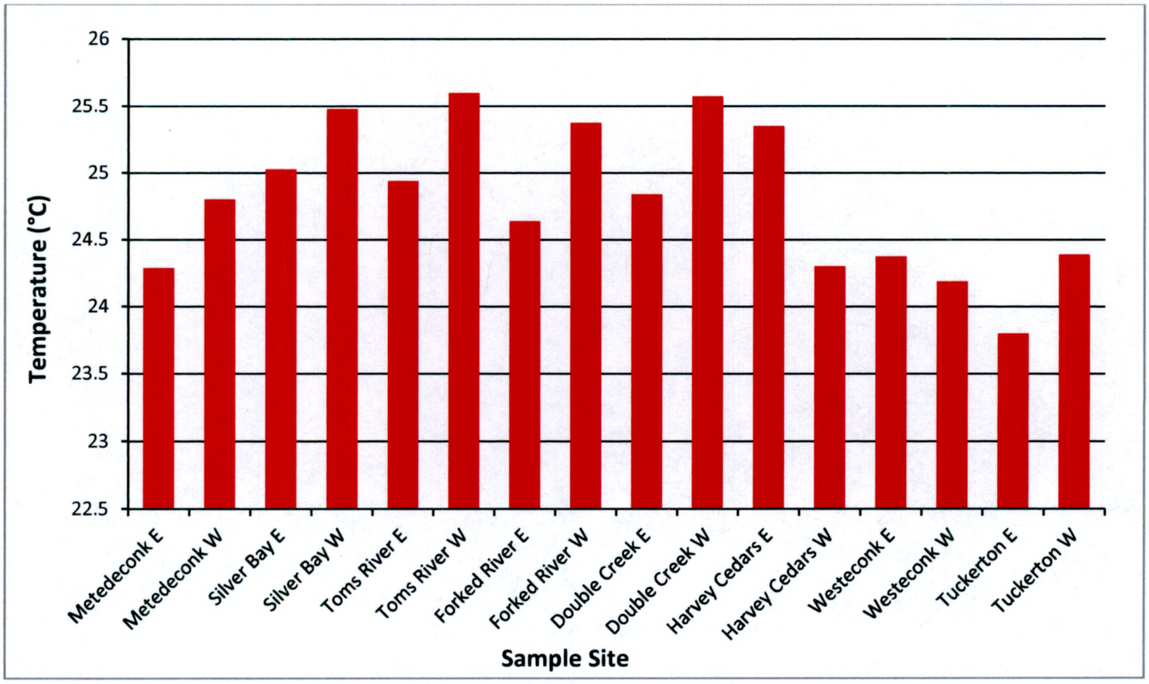

Figure 12. Average temperature values for sampling sites.

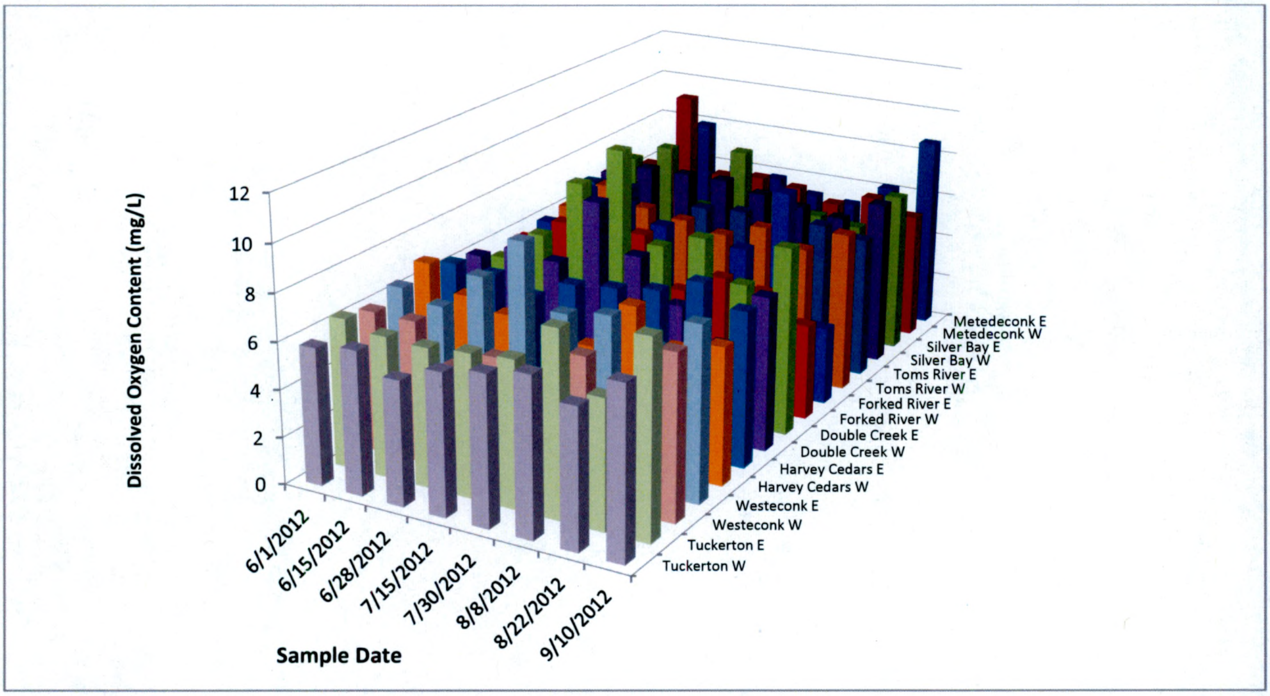

Figure 13. Dissolved oxygen content for sampling sites.

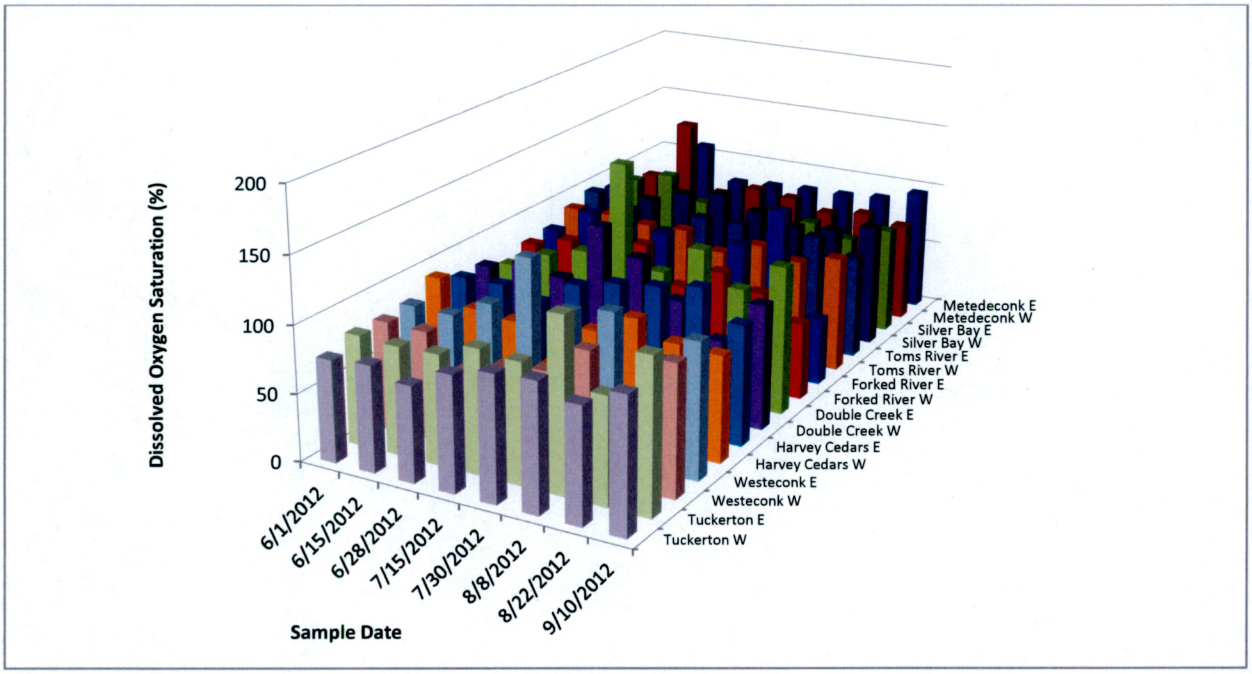

Figure 14. Dissolved oxygen saturation for sampling sites.

Gelatinous Zooplankton Distribution

Mnemiopsis leidyi showed significant differences in distribution among sites throughout the sampling season. On average, they were much more abundant in the southern portion of the bay in comparison to the north, with the highest site average at Tuckerton East and the lowest at Metedeconk West (Figure 15). In general, greater densities occurred from late June to mid-August in the south, though the highest density was recorded at Forked River East on 6/1/2012 (26.36 individuals/m^3). In the northern portion of the bay, *M. leidyi* individuals were found in both early June and late August in Metedeconk West, Metedeconk East and Toms River West. In Silver Bay West, Silver Bay East and Toms River East, individuals were found only in June, prior to the arrival of *C.quinquecirrha*. Statistical analysis of lift net abundances showed significant differences among sites ($F_{15, 1394}$=18.24, P<0.0001) and dates ($F_{7, 1394}$=17.83, P<0.0001).

Chrysaora quinquecirrha showed variation among collection sites, and occurred mostly in the northern portion on Barnegat Bay; however, on 7/15/2012 one individual was collected at Harvey Cedars East (Figure 16). Otherwise, no individuals were collected in the southern portion of the bay. The greatest density occurred on 7/15/2012 at Metedeconk East (0.63 individuals/m^3) and the highest site average of *C. quinquecirrha* occurred at Silver Bay West. Statistical analysis of lift net abundances showed significant differences among sites ($F_{15, 1394}$=7.72, P<0.0001), but no significant differences among dates ($F_{7, 1394}$=2.10, P<0.041). Correlation analysis of *M. leidyi* with *C. quinquecirrha* showed a significant negative relationship between the two species (r= -0.076, P<0.005).

Four other species of gelatinous zooplankton were collected in lift nets during sampling, including: *Beroe ovata*, *Pleurobranchia pileus*, *Aurelia aurita*, and *Cyanea capillata*. Of these four, only *B. ovata* showed significant differences among sites ($F_{15, 1394}$=4.51, P<0.0001) and dates ($F_{7, 1394}$=5.31, P<0.001), while *P. pileus* only showed significant differences among dates ($F_{7, 1394}$=6.58, P<0.001).

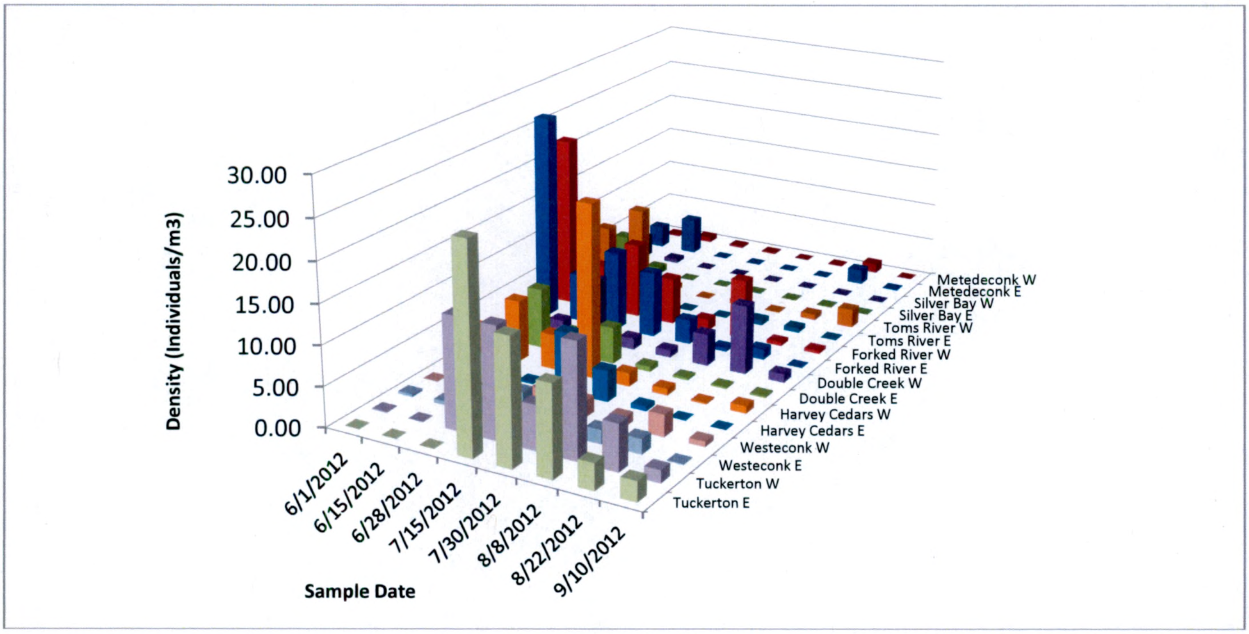

Figure 15. Lift net density of *Mnemiopsis leidyi* by site and date. Note: Double Creek East and West 6/1/2012 are not true zero values; data were not collected.

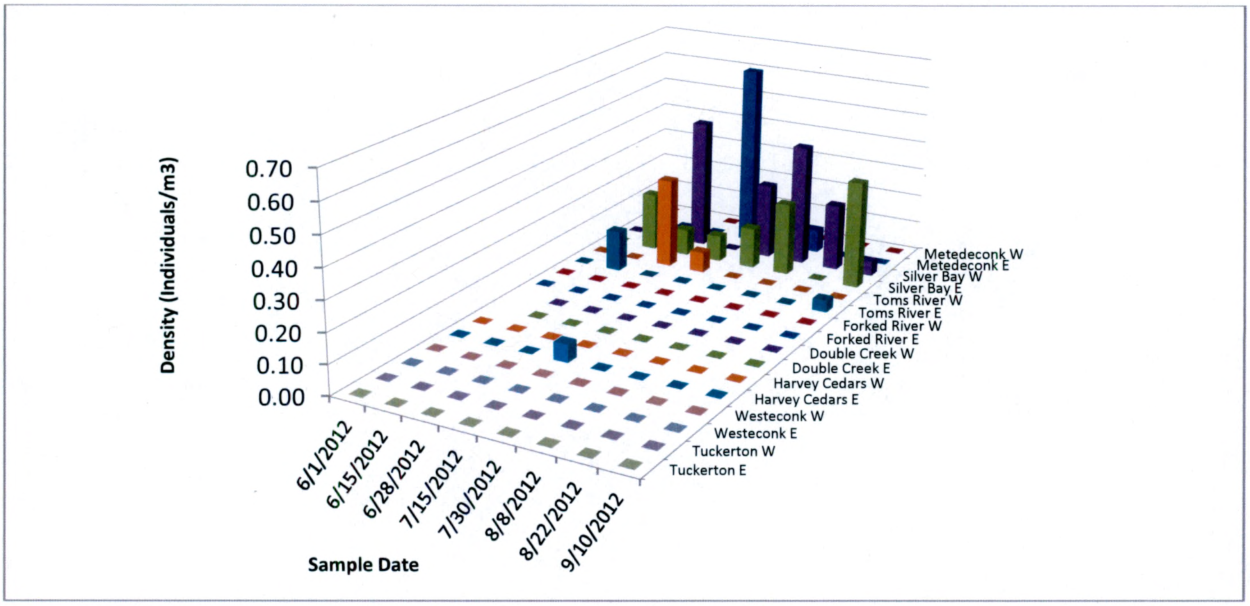

Figure 16. Lift net density of *Chrysaora quinquecirrha* by site and date. Note: Double Creek East and West 6/1/2012 are not true zero values; data were not collected.

Planktonic Community Structure

Results from the plankton tows indicate that *Mnemiopsis leidyi* were more abundant in the southern portion of Barnegat Bay, especially from late June to early July (Figure 17). ANCOVA analysis showed significant relationships for site ($F_{15, 347}$=7.81, P<0.0001) and date ($F_{7, 347}$=9.97, P<0.0001). In late July, densities began to fall off in several of the southern bay sites, including Double Creek East, as well as Harvey Cedars East and West. The greatest density was found at Tuckerton East on 8/8/2012 (36.75 individuals/m^3). The highest site average of *M. leidyi* occurred at Tuckerton East, while the lowest occurred at Metedeconk West. However, there was an increase in density in both Metedeconk East and West on 8/22/12, marking the highest densities recorded for these sites.

Mnemiopsis leidyi showed significant correlations with several taxa identified in plankton tow samples (Table 1). They were correlated positively with the scyphozoan species *Aurelia aurita* (r=0.15470, P<0.01) and a hydrozoan *Obelia* spp. (r=0.1707, P<0.01). They were also correlated positively, but not significantly, with several other gelatinous species collected during the study, including: *Eutima mira, Bougainvillea muscus, Turritopsis nutricula* and *Clytia* spp. *Mnemiopsis leidyi* were significantly negatively correlated with Calanoid copepods (r= -0.017982, P<0.01), fish eggs (r= -0.18997, P<0.01), Cladocera (r= -0.10293, P<0.05) and fish larvae (r= -0.10361, P<0.05). They were also correlated negatively, but not significantly, with Brachyuran larvae, Caridea larvae, Ostracoda and Polychatea.

The distribution of *C. quinquecirrha* showed higher densities in the northern portion of Barnegat Bay (Figure 18), however, juveniles were indentified from plankton samples at Harvey Cedars West and Tuckerton West on 7/15/2012, Harvey Cedars East on 7/30/2012, Westeconk East on 8/8/12 and 8/22/12 and Tuckerton East on 8/8/12. The greatest density of *C.*

quinquecirrha occurred at Metedeconk East on 7/15/2012 (0.37 individuals/m^3). ANCOVA analysis showed significant relationships for site ($F_{15, 347}$=7.75, P<0.0001) and date ($F_{7, 347}$=3.52, P=0.002). *Chrysaora quinquecirrha* showed significant positive correlation with ephyrae in plankton tows (r=0.14180, P<0.01) (Table 1). They also showed negative, though not significant, correlations with nearly all other organisms collected in plankton tows.

Ephyrae of gelatinous zooplankton were scattered throughout the bay both spatially and temporally. Over the course of the entire sampling season, ephyrae occurred at some point in all sample sites except Toms River West and Harvey Cedars East (Figure 20). The greatest density of gelatinous ephyrae occurred at Metedeconk East on 7/15/2012 (1.27 individuals/m^3). High abundances of ephyrae throughout the bay represent the extent to which populations of gelatinous zooplankton can expand and proliferate. Gelatinous ephyrae showed significant correlations with Pycnogonida (r=0.12507, P<0.01), Harpactechoida (r=0.11042, P<0.05) and Cladocera (r=0.10945, P<0.05) (Table 1). Further investigation of the impact of the ephyra life stage on the zooplankton community within Barnegat Bay is necessary to determine its significance in relation to the juvenile and adult stages.

Several other species of gelatinous zooplankton showed significant correlations with organisms collected in plankton tows. *Turritopsis nutricula* showed strong positive correlations with *Eutima mira* (r= 0.42653, P<0.001), Caridea larvae (r=0.22759, P<0.001) and Pycnogonida (r=0.38781, P<0.001) (Table 1). They also showed positive correlations with Polychatea (r=0.13068, P<0.01), Calanoid copepods (r=0.10038, P<0.05), Harpactechoida (r=0.10220, P<0.05) and Ostracoda (r=0.11867, P<0.05). *Clytia* spp. showed correlations with *Eutima mira* (r=0.13428, P<0.01), *Obelia* spp. (r=0.18014, P<0.01) and *Turritopsis nutricula* (r=0.19802, P<0.01). While these gelatinous zooplankton do not represent a significant impact like that of *C.*

quinquecirrha and *M. leidyi*, they are an important part of the gelatinous zooplankton predatory community structure in Barnegat Bay.

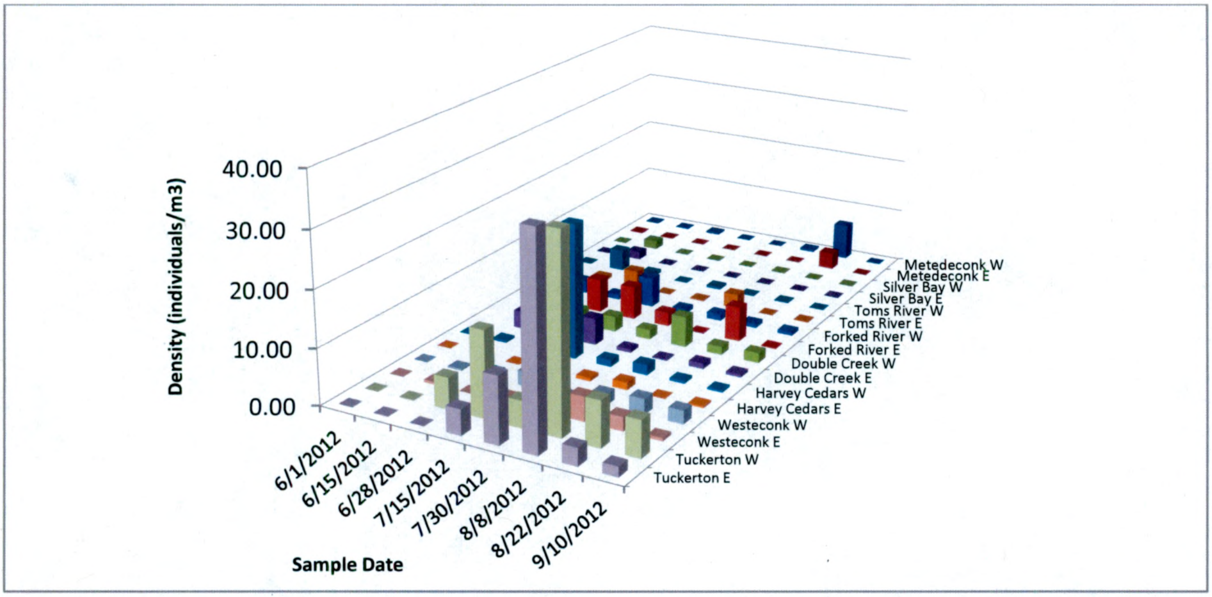

Figure 17. Plankton tow density of *Mnemiopsis leidyi* by site and date. Note: Double Creek East and West 6/1/2012 are not true zero values; data were not collected.

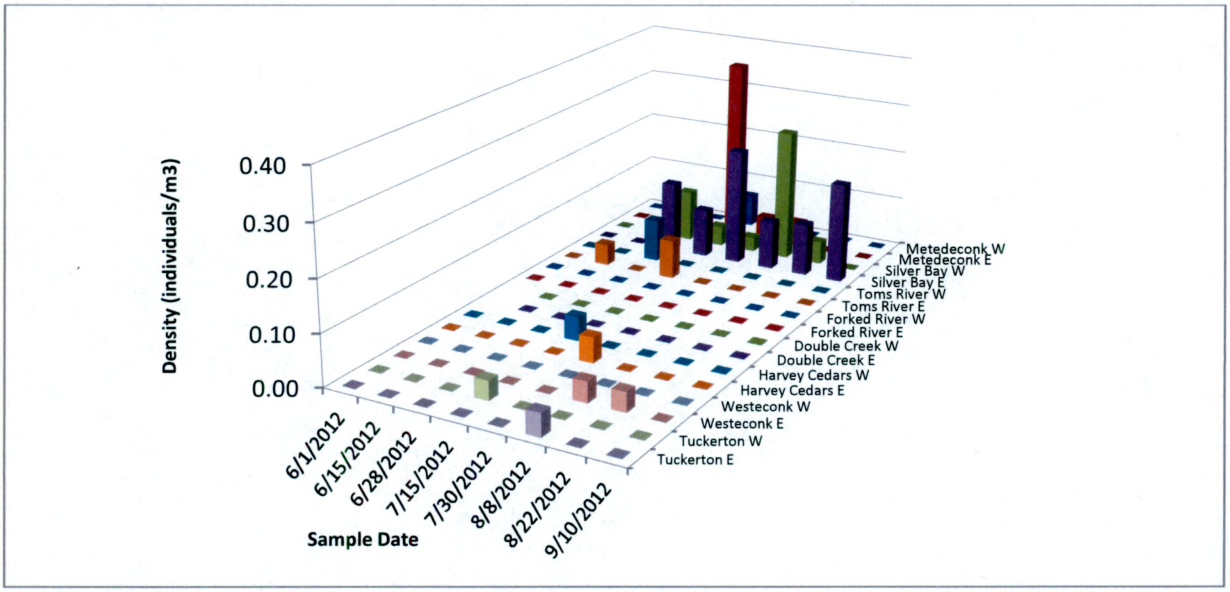

Figure 18. Plankton tow density of *Chrysaora quinquecirrha* by site and date. Note: Double Creek East and West 6/1/2012 are not true zero values; data were not collected.

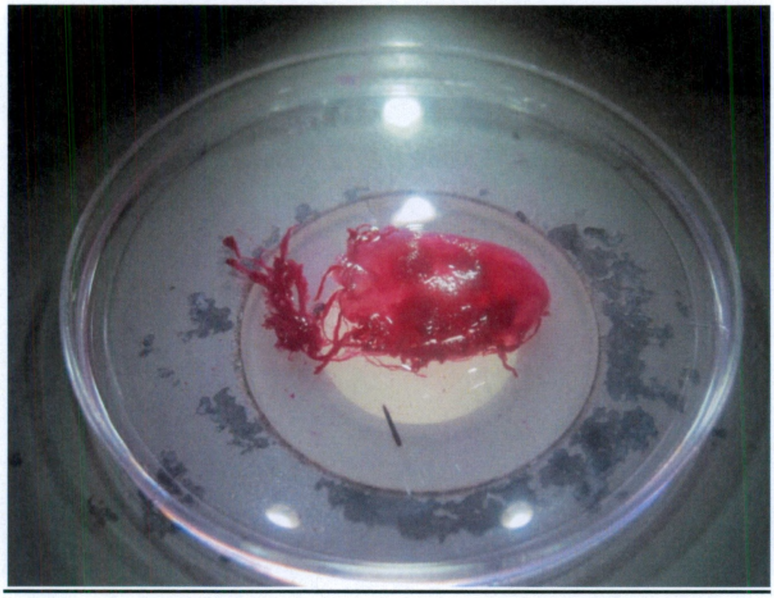

Figure 19. *Chrysaora quinquecirrha* under a dissecting scope in the lab.

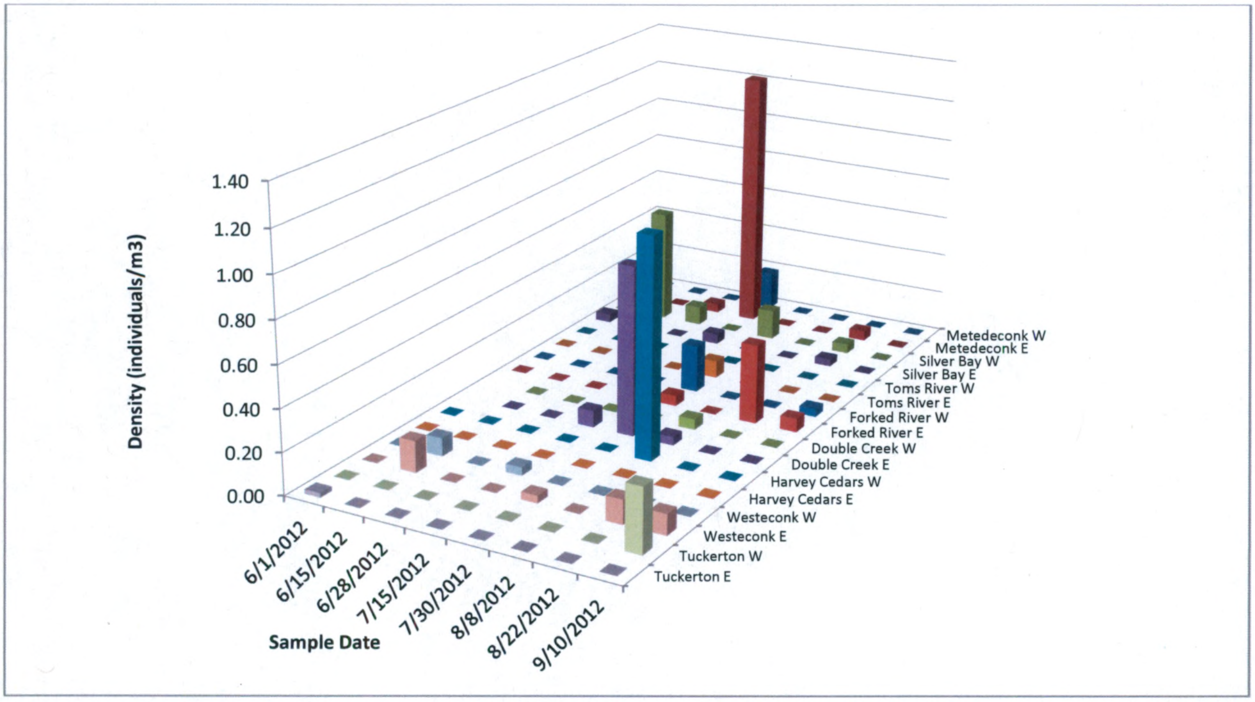

Figure 20. Plankton tow density of gelatinous ephyrae by site and date. Note: Double Creek East and West 6/1/2012 are not true zero values; data were not collected

Calanoid copepods were more abundant in the southern portion of Barnegat Bay than in the north (Figure 21). Abundances of Calanoid copepods were higher in late spring, dropped off in July and August and peaked once again in September in the southern part of the bay. In Metedeconk East and West, individuals were present in plankton tow samples on 7/30/2012, and then dropped on 8/8/2012. The greatest density of Calanoid copepods occurred at Tuckerton East on 9/10/2012 (471.88 individuals/m^3). ANCOVA analysis showed significant relationships for site ($F_{15, 347}$=5.62, P<0.0001) and date ($F_{7, 347}$=17.74, P<0.0001). Calanoid copepods showed strong positive correlations with Brachyura (r=0.25196, P<0.001), fish eggs (r=0.38571, P<0.001) and Caridea (r=0.50195, P<0.001) (Table 1). They also showed positive correlations with fish larvae (r=0.17928, P<0.01), Harpactechoida (r=0.18566, P<0.01) and Cladocera (r=0.11934, P<0.01). These correlations are indicative of the typical zooplankton community within Barnegat Bay.

Caridea larvae were highly variable across space and time in Barnegat Bay over the course of the sampling season. Densities in the southern portion of the bay dropped off in mid-July, but subsequently rose again at the end of July. A similar pattern also occurred during the month of August into September (Figure 22). Lower densities were also found northward from Forked River West to Silver Bay West. At Metedeconk East and West however, densities were much higher than any of the other sites in the northern half of the bay. The highest density occurred at Double Creek East on 6/28/2012 (34.29 individuals/m^3). A peak of Caridea larvae occurred in the southern half of the bay on 9/10/2012 and ANCOVA results showed significant differences among sites ($F_{15,347}$=6.84, P<0.0001) and dates ($F_{7,347}$=10.60, P<0.0001). Caridea larvae showed strong positive correlations with fish eggs (r=0.26280, P<0.001), fish larvae (r=0.23844, P<0.001), Ostracoda (r=0.23509, P<0.001) and Harpactechoida (r=0.2388, P<0.001)

(Table 1). They also showed positive correlation with Pycnogonida (r=0.14131, P<0.01). These relationships are most likely due to physical circulation concentrating several larval groups in the bay.

In general, Brachyuran larvae occurred more often in the southern half of Barnegat Bay (Figure 23). The highest density in the northern half of the bay occurred at Forked River West on 7/30/2012 (120.37 individuals/m^3). However, the highest density overall occurred at Westeconk West on 7/30/2012 (a staggering 99,964.59 individuals/m^3), dominated by blue crab larvae. Densities of Brachyuran larvae drastically dropped in southern Barnegat Bay in August. ANCOVA results showed significant differences among sites ($F_{15, 347}$=3.33, P<0.0001) and date ($F_{7, 347}$=3.99, P<0.0001). Brachyuran larvae showed strong positive correlation with copepods (r=0.25196, P<0.001), driven principally by high densities of copepods identified with crab larvae at Westeconk West on 7/30/2012.

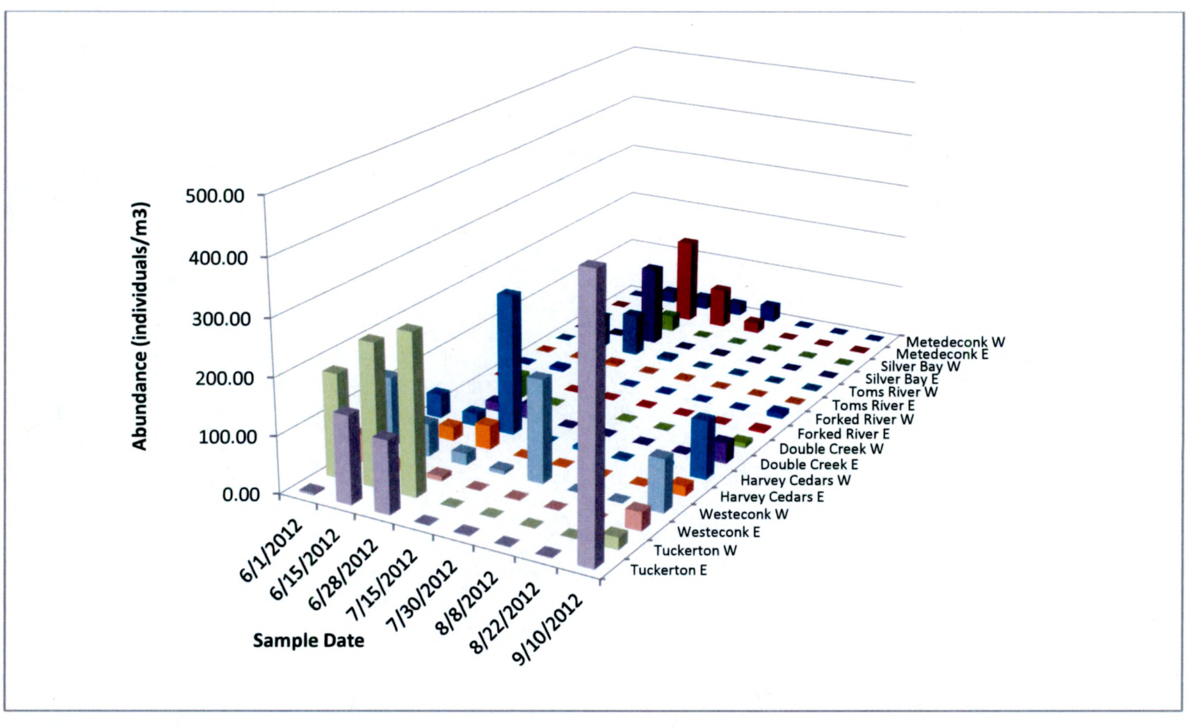

Figure 21. Plankton tow density of Calanoid copepods by site and date. Note: Double Creek East and West 6/1/2012 are not true zero values; data were not collected.

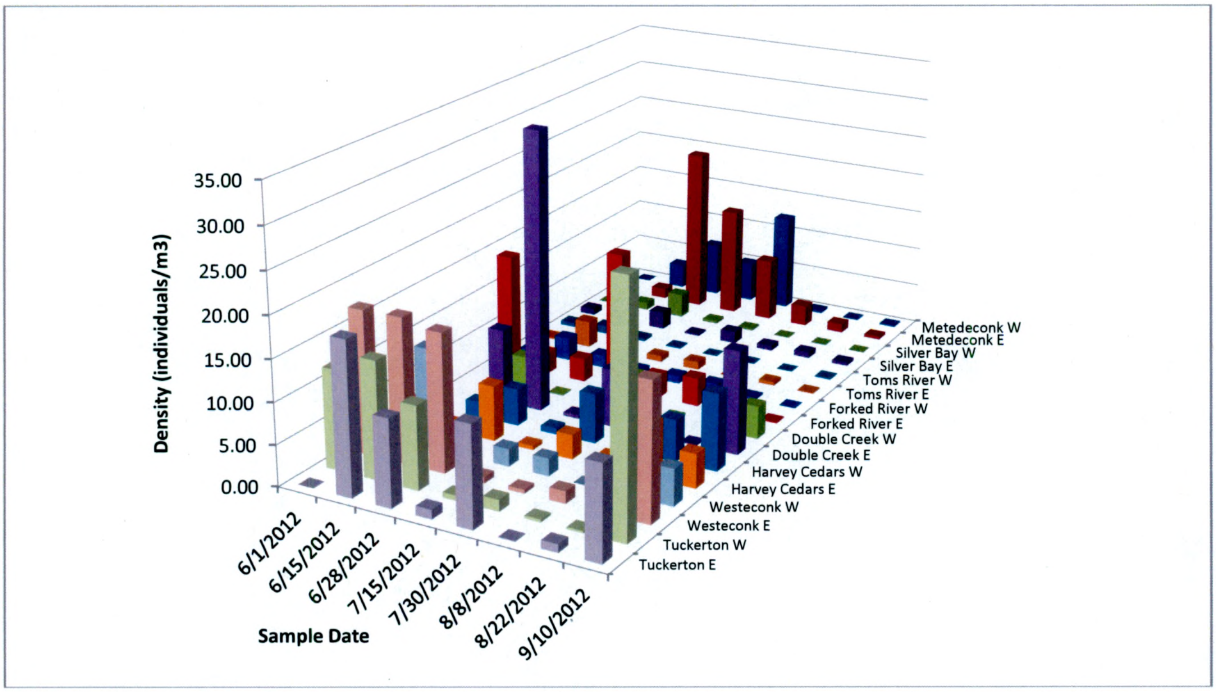

Figure 22. Plankton tow density of Caridea larvae by site and date. Note: Double Creek East and West 6/1/2012 are not true zero values; data were not collected.

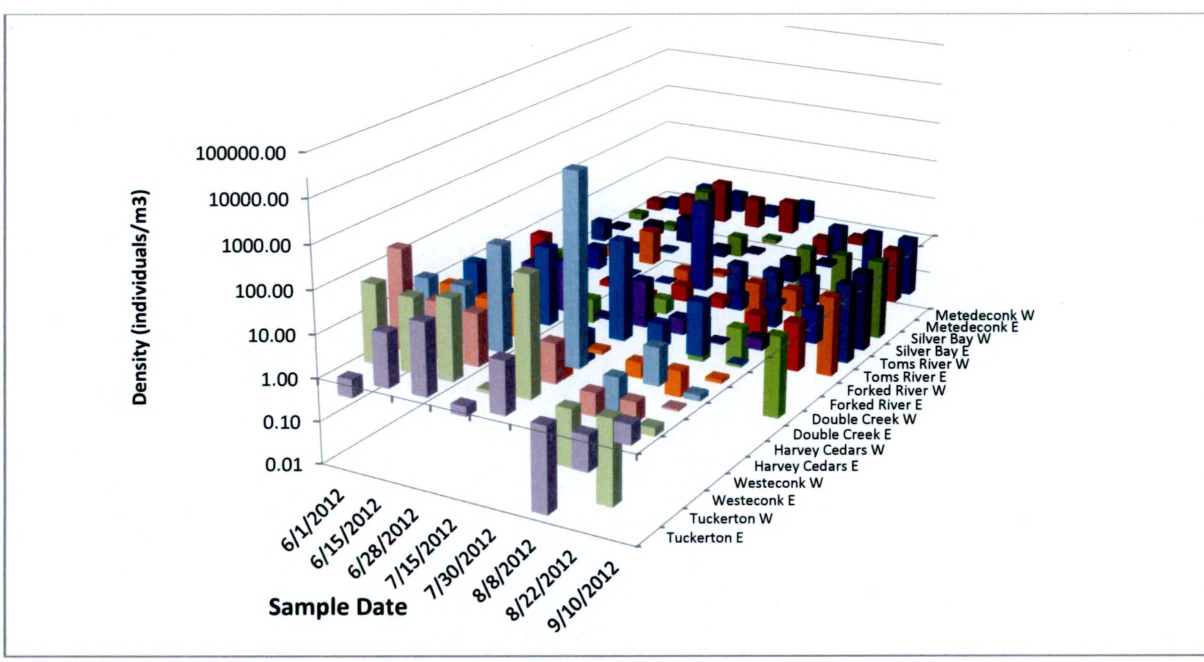

Figure 23. Plankton tow density of Brachyuran larvae by site and date. Note: Y-axis is logarithmic due to the substantial number of blue crab larvae collected. Note: Double Creek East and West 6/1/2012 are not true zero values; data were not collected.

Fish eggs were present throughout Barnegat Bay and most abundant during the early part of the sampling season. By the end of July, fish egg abundance declined drastically with only a few being collected during the remainder of the sampling season (Figure 24). ANCOVA results showed significant differences among sites ($F_{15, 347}=3.27$, $P<0.0001$) and date ($F_{7, 347}=49.10$, $P<0.0001$). Fish eggs showed strong positive correlation with fish larvae (r= -0.44223, P<0.001) and a positive correlation with Cladocera (r= 0.19186, P<0.01) (Table 1). They also showed negative correlations with *Eutima mira* (r= -0.15909, P<0.01) and *Turritopsis nutricula* (r= -0.19264, P<0.01). It is possible that these hydrozoan species are feeding on fish eggs in the bay. Fish eggs showed a negative correlation with Pycnogonida (r= -0.11945, P<0.05).

Fish larve were more abundant in the southern half of Barnegat Bay (Figure 25). In the south, densities of fish larvae dropped off significantly from the end of June into the months of July and August. There was an unexpected peak at Harvey Cedars West on 8/22/2012 (0.71 individuals/m^3), possibly suggesting tidal advection of oceanic fish larvae into the bay. Densities were mostly low in the northern portion of the Bay, occurring very sporadically across the sampling season. However, there was a peak at Toms River West on 6/15/2012 (3.76 individuals/m^3), much greater than any other values in the north and greater than most found in the south during sampling. The greatest density of fish larvae occurred at Tuckerton West on 6/15/2012 (5.64 individuals/m^3). ANCOVA results showed significant differences among sites ($F_{15, 347}=3.70$, $P<0.0001$) and date ($F_{7, 347}=12.41$, $P<0.0001$). Fish larvae showed a positive correlation with Cladocera (r= 0.13311, P<0.01) (Table 1). This was expected as they are both an integral part of the zooplankton community in the bay.

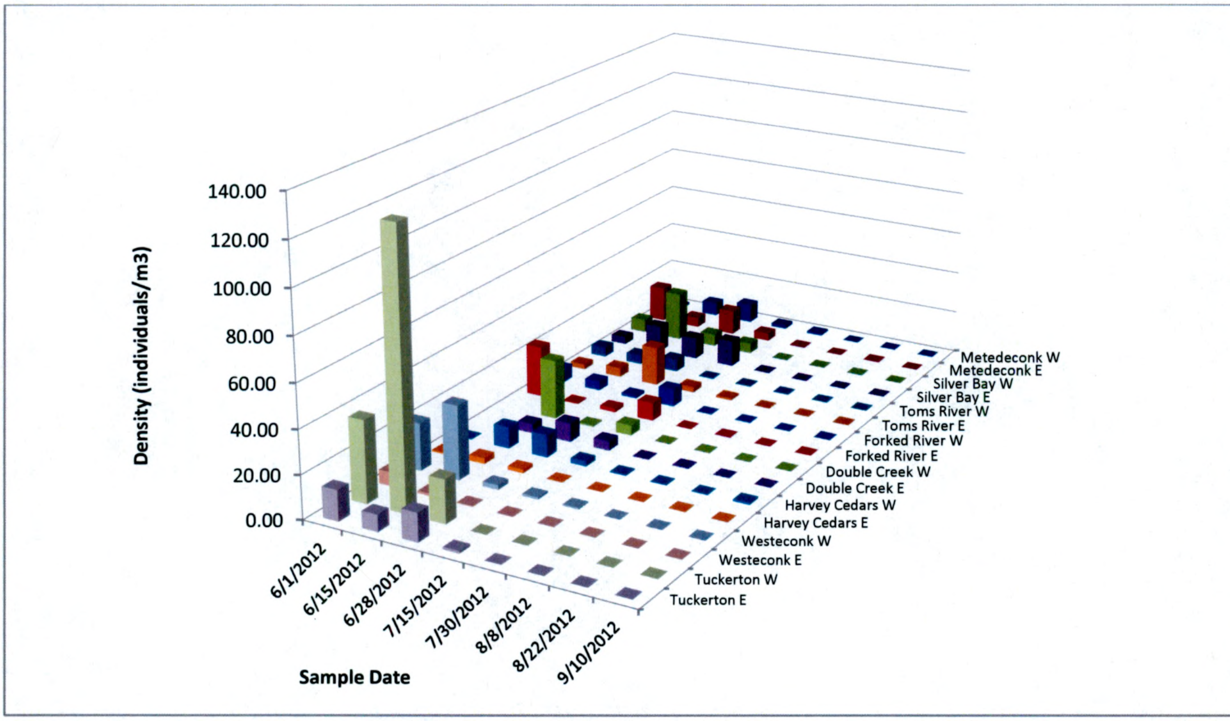

Figure 24. Plankton tow density of fish eggs by site and date. Note: Double Creek East and West 6/1/2012 are not true zero values; data were not collected.

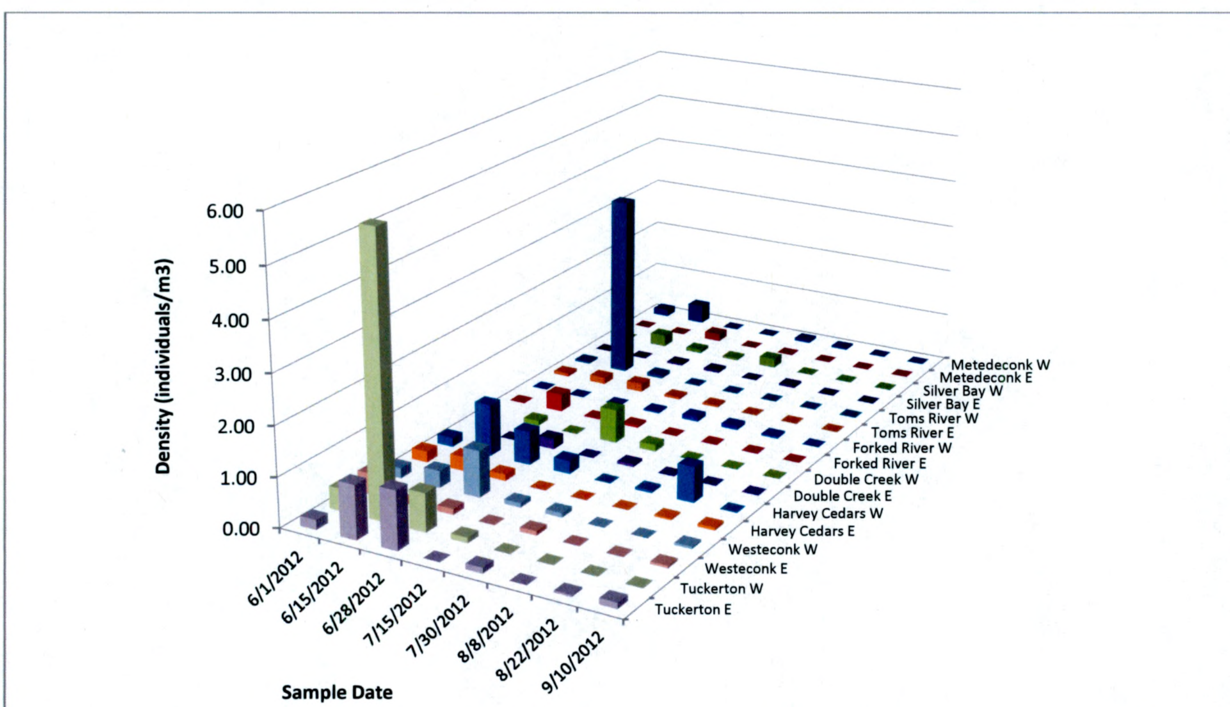

Figure 25. Plankton tow density of fish larvae by site and date. Note: Double Creek East and West 6/1/2012 are not true zero values; data were not collected.

Peracarida (i.e., amphipods and isopods) were present throughout Barnegat Bay and most abundant during the earlier portion of the sampling season, however, higher abundances were found in the southern portion of the bay compared to the north (Figure 26). Abundances of peracarida dropped off significantly in mid-August, though some were collected at all western sample sites as well as south eastern sites during the September sampling period. The greatest density of peracarida occurred on 8/8/2012 at Double Creek West (8.51 individuals/m^3). Of the 16 identified peracarida, 65 significant positive correlations exist (Table 2). This reflects their abundance within floating seagrass wrack collected within the bay. It is important to investigate further the potential for benthic-pelagic coupling involving these organisms, as most were found within seagrass and algal wrack in plankton tow samples.

Table 1. Zooplankton correlation analysis. Values in table represent the Pearsons 'r' with significance indicated by * P < 0.05, ** P < 0.01, *** P < 0.001, ns = not significant. Taxonomic abbreviations as follows: CQ = *Chrysaora quinquecirrha*, MNEM = *Mnemiopsis leidyi*, EUT = *Eutima mira*, CLY = *Clytia* spp., OB = *Obelia* spp., AUR = *Aurelia aurita*, BOU = *Bougainvillea muscus*, TUR = *Turritopsis nutricula*, BRACH = Brachyura, CALCOPE = Calanoida, FEGG = Fish Egg, CAR = Caridea, CLAD = Cladocera, FLARV = Fish Larva, OST = Ostracoda, POLY = Polychaeta, HARCOP = Harpactechoida, PYCNO = Pycnogonida.

	CQ	MNEM	EPHY	EUT	CLY	OB	AUR	BOU	TUR	BRACH	CALCOPE	FEGG	CAR	CLAD	FLARV	OST	POLY	HARCOPE	PYCNO
CQ	1																		
MNEM	-0.09418 ns	1																	
EPHY	0.14180 **	-0.00718 ns	1																
EUT	-0.04747 ns	0.09355 ns	-0.03377 ns	1															
CLY	-0.02762 ns	0.05208 ns	-0.02465 ns	0.13428 **	1														
OB	-0.03303 ns	0.17107 **	-0.02948 ns	0.05932 ns	0.18014 **	1													
AUR	-0.02258 ns	0.15470 **	-0.02016 ns	-0.01726 ns	-0.00622 ns	-0.00744 ns	1												
BOU	-0.02328 ns	0.04354 ns	-0.02077 ns	-0.01779 ns	-0.00641 ns	-0.00767 ns	-0.00524 ns	1											
TUR	-0.07035 ns	0.04156 ns	0.06928 ns	0.42653 ***	0.19802 **	-0.01499 ns	-0.02324 ns	0.05743 ns	1										
BRACH	-0.03922 ns	-0.06953 ns	-0.02314 ns	-0.02863 ns	-0.01257 ns	-0.01658 ns	-0.00550 ns	-0.00550 ns	-0.03782 ns	1									
CALCOPE	-0.00056 ns	-0.17982 **	0.00031 ns	0.12045 8	-0.05116 ns	-0.06053 ns	--0.04632 ns	-0.04632 ns	0.10038 *	0.25196 ***	1								
FEGG	-0.03798 ns	-0.18997 **	0.01489 ns	-0.15909 **	-0.05203 ns	-0.07037 ns	-0.04490 ns	-0.04490 ns	-0.19264 **	-0.0919 ns	0.38571 ***	1							
CAR	-0.06023 ns	-0.08809 ns	0.15852 **	0.09948 ns	-0.02521 ns	-0.06947 ns	-0.03222 ns	-0.03222 ns	0.22759 ***	0.01046 ns	0.50195 ***	0.26280 ***	1						
CLAD	-0.03103 ns	-0.10293 *	0.10945 *	-0.03772 ns	-0.02385 ns	-0.02852 ns	-0.01950 ns	-0.01950 ns	-0.01878 ns	-0.01813 ns	0.11934 **	0.19186 **	0.15840 **	1					
FLARV	-0.08280 ns	-0.10361 *	-0.05191 ns	-0.02422 ns	-0.04155 ns	-0.04970 ns	0.02323 ns	0.02323 ns	-0.04115 ns	0.03066 ns	0.17928 **	0.44223 ***	0.23844 ***	0.13311 **	1				
OST	-0.08675 ns	-0.03058 ns	0.06205 ns	0.04433 ns	0.00418 ns	-0.03506 ns	0.02833 ns	-0.02471 ns	0.11867 *	-0.02521 ns	0.09526 ns	0.01052 ns	0.23509 ***	-0.05077 ns	-0.03923 ns	1			
POLY	-0.04835 ns	-06067 ns	0.07354 ns	0.04931 ns	-0.00030 ns	-0.00244 ns	-0.03525 ns	-0.03525 ns	0.13068 **	0.09050 ns	0.01876 ns	0.04498 ns	0.03504 ns	-0.00752 ns	0.03625 ns	0.28531 ***	1		
HARCOPE	-0.04312 ns	0.03711 ns	0.11042 *	0.08141 ns	-0.02608 ns	-0.03119 ns	-0.02133 ns	-0.02133 ns	0.10220 *	-0.02150 ns	0.18566 **	-0.01860 ns	0.2388 ***	-0.02187 ns	0.00421 ns	0.07268 ns	0.20118 ***	1	
PYCNO	-0.09818 ns	0.02643 ns	0.12507 **	0.09558 ns	-0.02705 ns	-0.03235 ns	-0.02212 ns	-0.02280 ns	0.38781 ***	-0.03374 ns	0.03029 ns	-0.11945 *	0.14131 **	-0.05816 ns	-0.09221 ns	0.15179 **	0.21205 ***	0.21592 ***	1

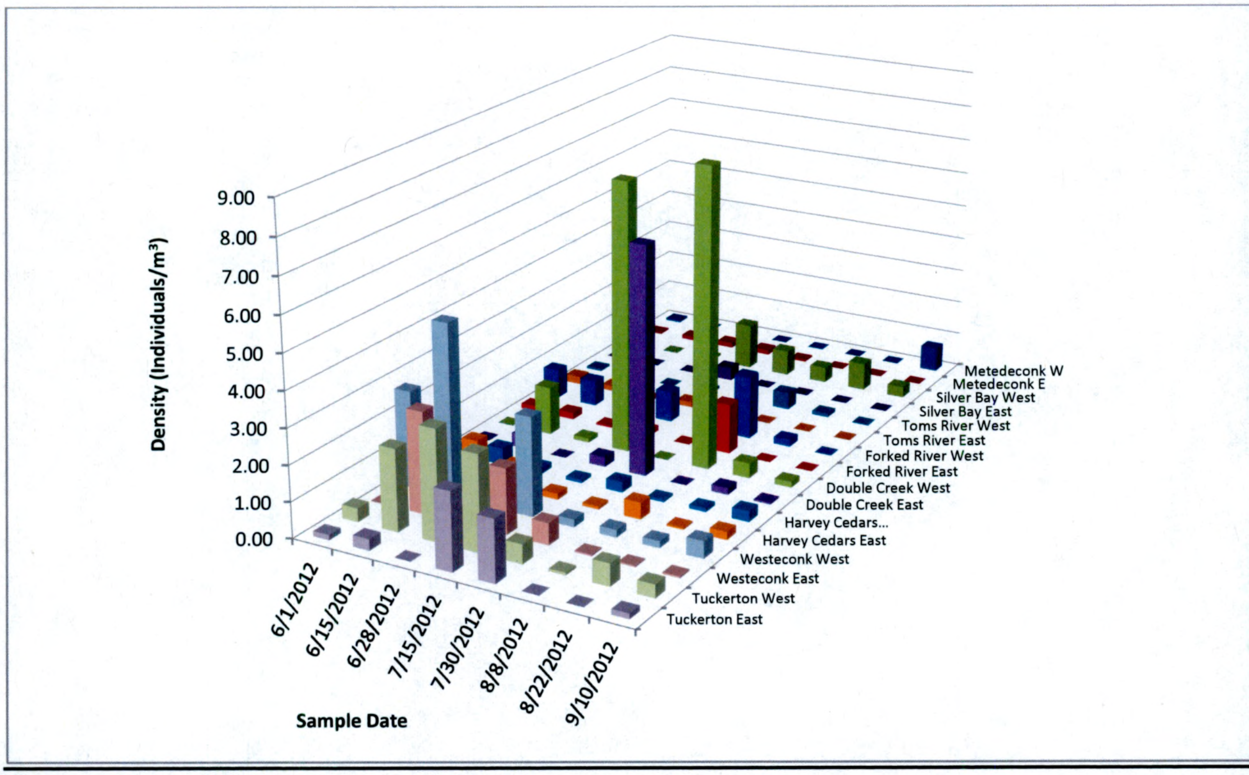

Figure 26. Plankton tow density of peracarida by site and date. Note: Double Creek East and West 6/1/2012 are not true zero values; data were not collected

Table 2. Peracarida correlation analysis. Values in table represent the Pearsons ‘r’ with significance indicated by * P < 0.05, ** P < 0.01, *** P < 0.001, ns = not significant. Taxonomic abbreviations as follows: MEL =Mellitidae, IB = *Idotea baltica*, GAM = *Gammarus* spp., CAP = Caprellidae, ER = *Erichsonella* spp., AOR = Aoridae, LIL = Lileborgiidae, ATL = Atlantidae, PX = Phoxocephalidae, AMT = Ampithodae, AML = *Ampelisca* spp., COR = Corophidae, LYS = Lysiianissidae, TAN = *Tanais cavolini*, HAU = Hausteridae, CYA = *Cyathura polita*.

	MEL	IB	GAM	CAP	ER	AOR	LIL	ATL	PX	AMT	AML	COR	LYS	TAN	HAU	CYA
MEL	1															
IB	0.51960***	1														
GAM	0.33118***	0.19954***	1													
CAP	0.34131***	0.25526***	0.06897 ns	1												
ER	0.19743***	0.30319***	0.03580 ns	0.11294 **	1											
AOR	0.37492***	0.20784***	0.15843 **	0.38130 ***	0.31225 ***	1										
LIL	0.32296***	0.11490**	0.08756 ns	0.33671 ***	0.06094 ns	0.35533 ***	1									
ATL	-0.01008 ns	0.03944 ns	0.02551 ns	-0.03683 ns	-0.02430 ns	-0.02972 ns	-0.03135 ns	1								
PX	0.45108***	0.38102***	0.09834 ns	0.17652 **	0.21174 ***	0.35768 ***	0.17099 **	-0.02739 ns	1							
AMT	0.16803**	0.14070**	-0.01636 ns	0.11004 *	0.16164 **	0.33436 ***	0.15874 **	-0.01644 ns	0.31860 ***	1						
AML	0.19208**	0.15563**	0.09487 ns	0.42334 ***	-0.01786 ns	0.33884 ***	0.18011 **	-0.01747 ns	0.14563 **	0.19403 **	1					
COR	0.03614 ns	-0.04135 ns	-0.0386 ns	0.12861 *	-0.01425 ns	-0.01743 ns	-0.01838 ns	-0.1394 ns	-0.01606 ns	0.13738 **	-0.0124 ns	1				
LYS	0.17649 **	0.02963 ns	-0.03823 ns	0.10786 *	0.15621 **	0.26200 ***	0.15398 **	-0.1392 ns	0.19324 **	0.32110 ***	-0.01023 ns	-0.00816 ns	1			
TAN	0.23769 ***	0.06733 ns	-0.03092 ns	0.27994 ***	0.23054 ***	0.38271 ***	0.34539 ***	-0.01126 ns	0.42259 ***	0.46189 ***	-0.00828 ns	-0.00660 ns	0.44204 ***	1		
HAU	0.25412***	0.23579***	0.10556 **	-0.01244 ns	0.36608 ***	0.42381 ***	-0.01058 ns	-0.00803 ns	0.33181 ***	-0.00555 ns	-0.00590 ns	-0.00471 ns	-0.00470 ns	-0.00380 ns	1	
CYA	0.08084 ns	0.03603 ns	-0.03097 ns	-0.01748 ns	0.11782 *	0.16938 **	-0.01488 ns	-0.01128 ns	0.11192 *	0.12199 *	0.33884 ***	-0.00661 ns	-0.00661 ns	-0.00534 ns	0.00381 ns	1

Discussion

Water Quality and Coastal Development

Eutrophication in coastal areas occurs as a result of pollution from human activities such as agriculture and urban development. It typically causes degraded water quality which can lead to changes and disruptions in food webs within the ecological community (Mills, 1995 & 2001; see review by Purcell et al., 2007; Richardson et al., 2009). Barnegat Bay exemplifies a coastal system in which increases in coastal development have caused it to become profoundly eutrophic (Kennish et al., 2007). In response to this, planktonic food webs have become disrupted and have shifted towards a regime in which gelatinous zooplankton such as *C. quinquecirrha* and *M. leidyi* can become dominant predators.

Coastal development eliminates much of the natural habitat in systems that are already declining due to other anthropogenic impacts. The replacement of natural coastline with hardened structures such as homes, bulkheads, docks and piers has increased substrate and settlement opportunities for larvae and polyps of *Chrysaora quinquecirrha* (Hoover & Purcell, 2009). Lagoon communities located on the bay serve as areas where populations of *C. quinquecirrha* can establish themselves (Bologna, 2011) and continue to proliferate year after year.

The physical water parameters in Barnegat Bay represent the circumstances typical of a coastal system where gelatinous zooplankton have become a major component of the local fauna. Lower salinities in the Northern portion of the bay are well within the tolerance range for gelatinous species such as *C. quinquecirrha* and *M. leidyi*. *Chrysaora quinquecirrha* was found most often in the northern reaches of Barnegat Bay, where salinities ranged from 17-21 ppt (Figure 11). These salinities represent the mesohaline range in which the organism thrives best

(Purcell et al., 1999; Decker et al., 2004). Though *C. quinquecirrha* medusae were found at Harvey Cedars East and West, as well as Tuckerton East, salinities in the southern portion of the bay remain at the high end of tolerance (above 25 ppt). Higher salinities in south Barnegat Bay also represent a range in which the survival of polyps and capability of reproduction become difficult, if not impossible, as this life stage rarely occurs in waters between 20-25 ppt (Purcell et al., 1999). *Mnemiopsis leidyi* has a much larger tolerance range for salinity (2-38 ppt, Purcell et al., 2001), which could potentially explain the greater abundances located in the southern portion of the bay.

Water temperature at the beginning of the sampling season was well within the range of where strobilation is known to occur in *C. quinquecirrha*. Polyps typically begin producing ephyrae when water temperatures reach 17°C (Purcell et al., 1999) and all sites sampled within Barnegat Bay remained between 18-29°C throughout the sampling season. This allowed for the consistent production of ephyrae and juveniles, which were collected throughout the summer (Figures 16, 18, 20). Encystment of polyps begins to occur as water temperatures begin to drop (Purcell et al., 1999). However, water temperatures at the end of the sampling season still remained well above the threshold for this to occur.

Dissolved oxygen concentrations within Barnegat Bay were observed between 4-11 mg/L, a range of low values similar to those previously recorded (Kennish et al., 2007). These values remained well above the low end of tolerance for both *C. quinquecirrha* medusae and *M. leidyi*, reported as low as 0.5 mg/L in other studies (Grove & Breitburg, 2005). It is unlikely that dissolved oxygen content is a major proponent behind the inverse distribution of *C. quinquecirrha* and *M. leidyi* in the bay.

Water quality in Barnegat Bay represents one of several potential factors in the abundance of gelatinous zooplankton found there, especially the presence of *C. quinquecirrha* in the northern portion. Low dissolved oxygen content, consistent warm water temperatures during the summer season, and low salinity values in north Barnegat Bay create an environment where *C. quinquecirrha* can thrive and have an impact on planktonic community structure.

Gelatinous Zooplankton Distribution and Abundance

Chrysaora quinquecirrha was the dominant species of gelatinous zooplankton in north Barnegat Bay, while *M. leidyi* dominated both lift net and plankton tow samples in the south. While water quality parameters may explain the occurrence of *C. quinquecirrha* in the northern portion of the bay, trophic interactions provide an additional mechanism for the distribution of *M. leidyi*. *Chrysaora quinquecirrha* are known to feed on *M. leidyi* in both field and laboratory settings, even those larger than themselves (Kreps et al., 1997). My correlation analysis from lift nets demonstrates a significant negative correlation between these two species and explains their inverse distribution in Barnegat Bay. This allows *C. quinquecirrha* to have top-down predation control of *M. leidyi* in the northern portion of the bay. Consequently, the presence of *C. quinquecirrha* significantly influences the distribution and abundance of *M. leidyi* there. Control of *M. leidyi* can induce further changes to the food web structure that may vary annually (sensu Decker et al., 2007). *Mnemiopsis leidyi* was more dominant in south Barnegat Bay, due in part to their tolerance of higher salinities than *C. quinquecirrha* (Purcell et al., 2001; Decker et al., 2004). Tidal fluctuation is greater through Barnegat Inlet and Little Egg Harbor (Chizmadia et al., 1984), possibly allowing the larval and ephyrae stages of *C. quinquecirrha* to be flushed out of the system in areas where these fluctuations are greater, whereas *M. leidyi* are not similarly impacted. The minimization of tidal fluctuation moving northward from Barnegat inlet may limit the out-welling of ephyrae and juveniles, thereby explaining the greater abundances of *C. quinquecirrha* observed there.

Though *C. quinquecirrha* was found predominantly in the north Barnegat Bay, adult and juvenile individuals were found in southern Barnegat Bay during the course of study. The presence of *C. quinquecirrha* in lagoon communities and southern bay sites led to the belief that northern populations are beginning to move southward. Most probably, larvae from the 2011 reproduction season (Bologna, 2011) may have settled into lagoon communities further south, leading to the propagation of polyps capable of producing ephyrae that grew into the juveniles and adults collected in 2012. Consequently, gelatinous zooplankton presence in lagoon communities must be further examined in order to determine how these areas are facilitating the proliferation of *C. quinquecirrha* throughout the entirety of Barnegat Bay.

Community Interactions

Chrysaora quinquecirrha and *M. leidyi* are both known for being capable and voracious predators within coastal systems that they inhabit. Tolerance to a wide range of environmental parameters allows for gelatinous zooplankton to exploit food resources and have a strong top-down effect upon food web structures in these ecosystems (see review by Purcell & Arai, 2001; Purcell & Decker, 2005). Correlation analysis of *C. quinquecirrha* with other zooplankton in Barnegat Bay determined that there were negative relationships with other organisms, but few were significant (Table 1). Many of these organisms are targeted prey of *C. quinquecirrha*, including: *M. leidyi*, fish eggs, copepods and fish larvae (Purcell, 1992; Ford et al., 1997). Predation effects of *C. quinquecirrha* on fish larvae can reach as high as 30% clearance rate per day in areas with numerous individuals (see review by Purcell & Arai, 2001). Other in-situ observations of *C. quinquecirrha* in Chesapeake Bay showed predation rates of 94% copepods, 17% fish eggs and 55% fish larvae clearance per day (Matanoski et al., 2001). Past experiments have shown that even the polyp stage increases its ephyrae production in response to increasing zooplankton food sources (Purcell et al., 1999).

Correlation analysis of *M. leidyi* with other zooplankton in Barnegat Bay showed similar negative impacts to those seen with *C. quinquecirrha*. *Mnemiopsis leidyi* showed significant negative correlations with copepods, fish larvae, fish eggs, brachyura, caridea and cladocera, all of which are known food resources for the organism (Table 1). Previous observations have found *M. leidyi* to have a significant impact upon copepod populations, capable of greater clearance rates than *C. quinquecirrha* of equivalent size (Purcell & Decker, 2005). In Barnegat Bay, large blooms of *M. leidyi* caused sharp reductions in copepod populations during the years 1964-1965 and 1967-1969 (Mountford, 1980). In other research, *M. leidyi* has been observed to clear up to 65% of fish egg standing stock per day, though their impact on fish larvae was less significant (see review by Purcell & Arai, 2001). Research has shown that *M. leidyi* experiences population declines in the presence of *C. quinquecirrha* (Purcell et al., 1991; Kreps et al., 1997; Decker et al., 2004; Purcell & Decker, 2005), and my results concur, as was seen with their inverse distribution in Barnegat Bay (Figures 15, 16, 17, 18). It must also be recognized that sampling during this study was performed only during daytime hours. Several zooplankton species are known to exhibit diel vertical migration patterns in which larger abundances will be present during the night (Mountford, 1980). Though the effects of diel migration were not included in this study, it is possible that they have an impact on zooplankton community interactions and the structuring forces of the top gelatinous predators.

In Chesapeake Bay, research showed that in years where *C. quinquecirrha* was abundant, *M. leidyi* densities decreased due to the former preying on the latter. This had the potential to change top-down predation impacts on copepod populations in the system (Purcell & Decker, 2005). In years that *M. leidyi* was abundant, copepod numbers were reduced. In years that *C. quinquecirrha* was abundant and feeding heavily on *M. leidyi*, copepod numbers were higher. This implied that *C. quinquecirrha* had a direct impact on *M. leidyi* densities, while having an indirect impact on copepod densities (Purcell & Decker, 2005).

In Barnegat Bay, the differences in abundances of *C. quinquecirrha* and *M. leidyi* in the northern and southern portions make it necessary to look at top-down impacts of each of these predators separately. In the north, *C. quinquecirrha* has a strong top-down impact on *M. leidyi* similar to the findings in the Chesapeake (Figure 27), but *M. leidyi* does not appear to have the expected predation impact on copepods (Figure 28). Instead, *C. quinquecirrha* appears to not only exert top-down control of *M. leidyi* in north Barnegat Bay, but also copepod populations (Figure 29).

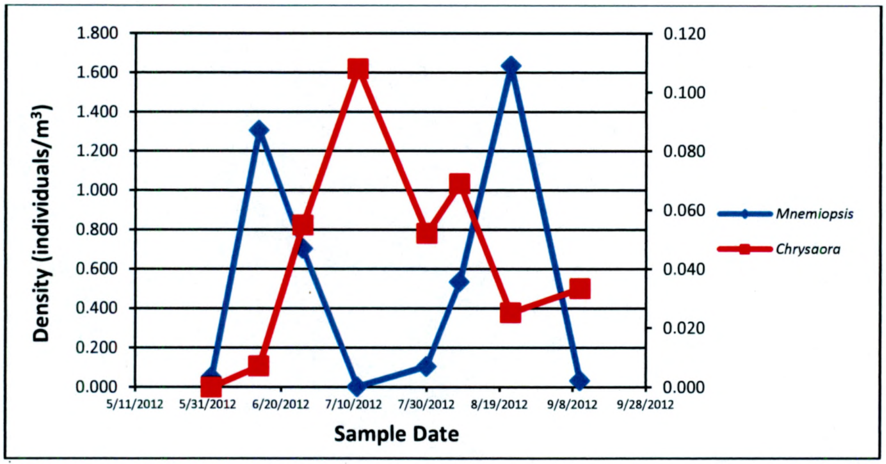

Figure 27. North Density of *C. quinquecirrha* vs. *M. leidyi*

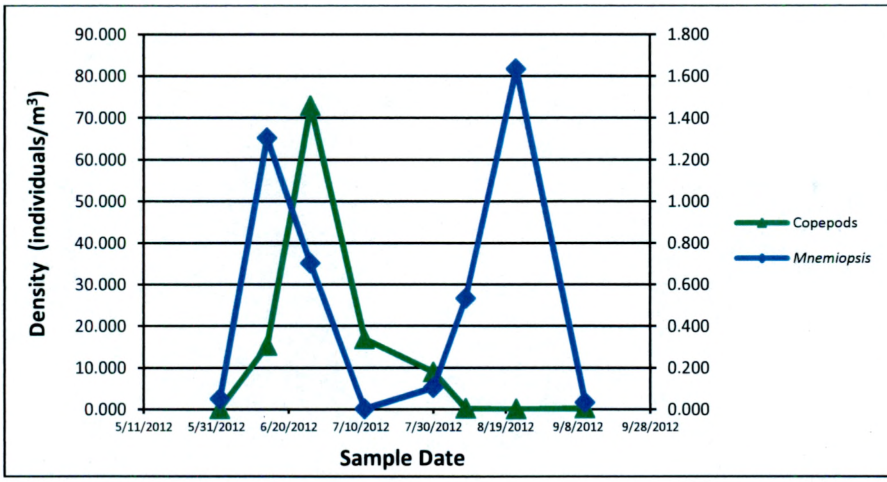

Figure 28. North Density of *M. leidyi* vs. Copepods

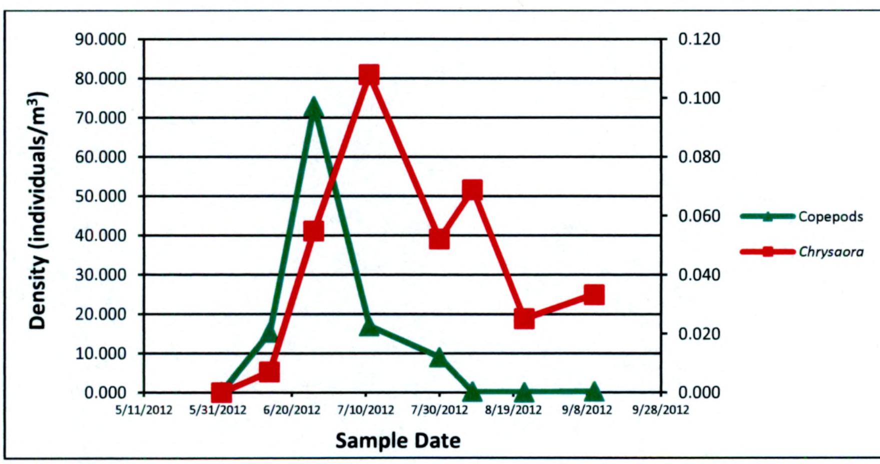

Figure 29. North Density of *C. quinquecirrha* vs. Copepods

In the south, *C. quinquecirrha* abundance was so low that they had little impact on *M. leidyi* populations (Figure 30) and *M. leidyi* showed strong direct top-down control of copepod populations (Figure 31), similar to that seen by Mountford (1980) forty years earlier. With few individuals, *C. quinquecirrha* appears to play a limited role in structuring copepod densities in the southern portions of the bay (Figure 32). As such, in the absence of *C. quinquecirrha*, *M. leidyi* distribution, density, and impacts on copepod populations has not fundamentally changed in at least five decades.

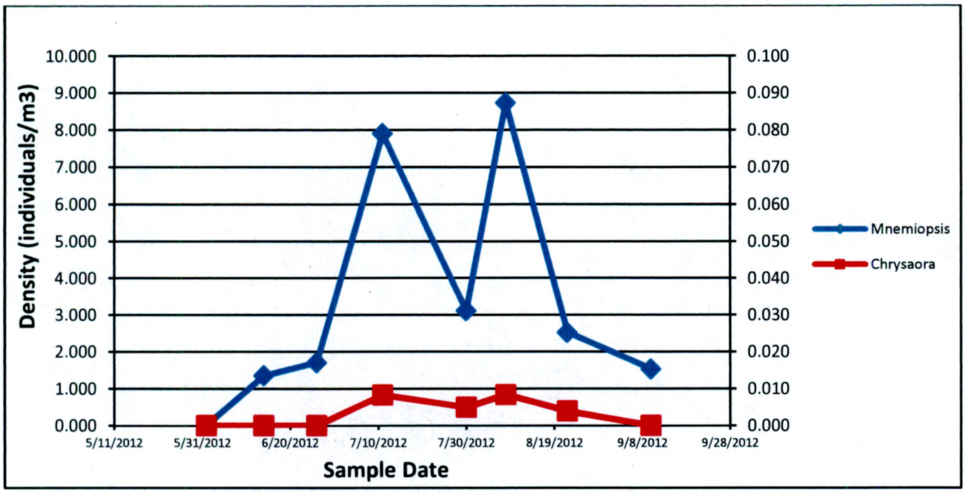

Figure 30. South Density of *C. quinquecirrha* vs. *M. leidyi*

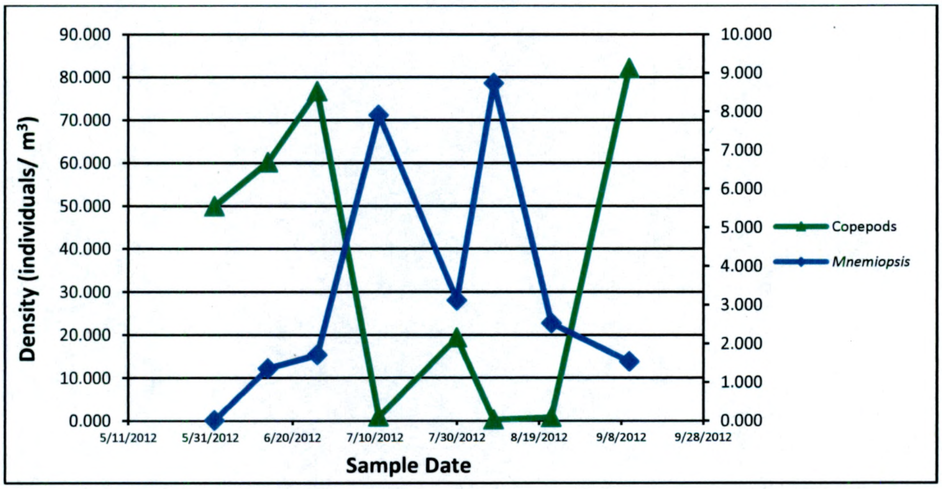

Figure 31. South Density of *M. leidyi* vs. Copepods

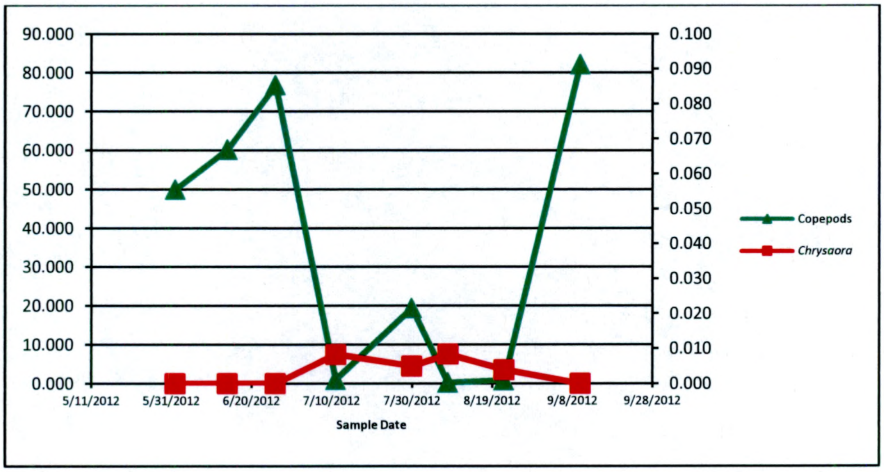

Figure 32. South Density of *C. quinquecirrha* vs. Copepods

Many of the plankton tow samples performed during the field season yielded large amounts of seagrass and algal wrack. Within this vegetation, several different benthic taxa were collected, including large numbers of peracarida. Correlation analysis showed many significant positive relationships among different peracarida taxa collected in the bay (Table 2). The observation of peracarida within seagrass wrack is indicative of potential benthic-pelagic coupling that could be unique to the community food web in Barnegat Bay. Consumption of peracarida inhabiting seagrass wrack by fish larvae and juveniles has been observed in south-western Australia (Hyndes & Lavery, 2005) and New Zealand (Woods, 2009). It is likely that a similar relationship could be beneficial to juvenile fish which can exploit peracarida in the seagrass and algal wrack as a food resource within the surface waters of Barnegat Bay. However, what is clearly not known is whether gelatinous zooplankton consume these organisms and contribute to pelagic food webs or whether these floating wracks are merely transient temporary habitat for peracarida.

Conclusion

Alterations to coastal areas, such as eutrophication and urban development, are causing shifts in species composition and abundance that can have significant impacts on the food web structure of these communities. As other higher trophic level organisms such as larger fish are unable to survive in nutrient-loaded waters due to higher oxygen demands, gelatinous zooplankton are likely to become dominant predators with a strong top-down control of the zooplankton community. The unique life cycle strategies, high tolerance and voracious feeding practices of gelatinous zooplankton allow them to quickly adapt and gain control over food web structure in coastal waters. Several other hydrozoan species of gelatinous zooplankton were collected during the course of study, presenting another group of organisms who may play an important role in the food web structure within Barnegat Bay in the future. Their relationship to dominant species such as *C. quinquecirrha* and *M. leidyi* must be explored further, as well as any impact they may have upon zooplankton community structure.

It is evident that there is a strong gelatinous regime within Barnegat Bay that could have major implications for the health of the ecosystem. It is important for continued observation of gelatinous zooplankton populations, including *C. quinquecirrha* and *M. leidyi*, to fully understand the impacts that these organisms are having upon the local zooplankton populations in Barnegat Bay.

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Appendix A: Lift Nets

June 1, 2012

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Chrysaora quinquecirrha	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Beroe ovata	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0.28±0.38	0±0	0±0
Mnemiopsis leidyi	2.85±1.26	0.08±0.28	4.41±1.34	2.80±1.99	6.33±3.03	7.14±7.35	26.36±7.25	22.06±11.02	0±0	0±0	6.09±2.17	3.31±2.35	0.31±0.63	0.05±0.16	0.12±00.29	0±0
Pleurobranchia pileus	0.54±0.82	0±0	0±0	0.05±0.19	0±0	0.14±0.45	0.11±0.38	0±0	0±0	0±0	0.05±0.17	0.07±0.22	0±0	0±0	0.16±0.30	0±0
Aurelia aurita	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Cyanea capillata	0±0	0.07±0.23	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0

June 15, 2012

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Chrysaora quinquecirrha	0±0	0±0	0.20±0.44	0±0	0.14±0.34	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Beroe ovata	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Mnemiopsis leidyi	4.70±4.94	0.07±0.25	0.89±1.60	0.52±0.59	0.52±0.52	10.51±14.39	6.27±7.53	0±0	7.65±5.32	1.57±3.02	0±0	7.43±19.40	0.54±0.77	0.25±0.37	0±0	0.03±0.07
Pleurobranchia pileus	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Aurelia aurita	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Cyanea capillata	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0

June 26, 2012

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Chrysaora quinquecirrha	0±0	0±0	0.09±0.31	0.45±0.72	0±0	0.31±0.82	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Beroe ovata	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Mnemiopsis leidyi	0±0	0.26±0.38	0±0	0±0	2.51±1.23	0.69±0.89	10.15 ±6.27	9.63±5.26	2.99±1.77	8.16±8.73	0.19±0.32	4.48±1.43	1.71±2.42	4.42±4.94	0±0	13.96±9.77
Pleurobranchia pileus	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0.46±0.89	0±0	0±0
Aurelia aurita	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Cyanea capillata	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0

July 12, 2012

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Chrysaora quinquecirrha	0.63±0.98	0.07±0..26	0.09±0.31	0±0	0±0	0.07±0.26	0±0	0±0	0±0	0±0	0.06±0.20	0±0	0±0	0±0	0±0	0±0
Beroe ovata	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Mnemiopsis leidyi	0±0	0.15±0.34	0±0	0±0	0.05±0.16	0±0	8.40±5.65	5.98±3.06	4.65±3.11	1.46±0.89	7.57±4.05	22.03±12.96	3.99±2.41	2.36±1.43	25.50±15.22	13.90±6.50
Pleurobranchia pileus	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Aurelia aurita	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Cyanea capillata	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0

July 30, 2012

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Chrysaora quinquecirrha	0 ±0	0±0	0.14±0.32	0.26±0.42	0±0	0.07±0.26	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Beroe ovata	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Mnemiopsis leidyi	0±0	0±0	0±0	0±0	0.04±0.15	0.61±0.91	3.13±1.115	1.49 ±1.16	0.66±0.75	0.94±0.91	3.91± 3.37	1.69±1.03	2.28±1.20	2.06± 3.76	15.55± 11.88	5.58±2.61
Pleurobranchia pileus	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Aurelia aurita	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0.10±0.35	0±0	0±0	0±0
Cyanea capillata	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0

August 8, 2012

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Chrysaora quinquecirrha	0.08 ±0.27	0±0	0.25±0.45	0.42±0.56	0±0	0.07±0.26	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Beroe ovata	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Mnemiopsis leidyi	0±0	0.08±0.27	0.08±0.29	0±0	0.65±0.56	0.09±0.30	0.45±1.01	0.67 ±7.28	0.27±0.35	4.06 ±3.21	0.5\± 0.63	0.83±0.72	1.75±0.99	1.21± 0.99	11.24± 4.34	14.19± 4.79
Pleurobranchia pileus	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Aurelia aurita	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Cyanea capillata	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0

August 22, 2012

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Chrysaora quinquecirrha	0±0	0±0	0±0	0.23±0.29	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Beroe ovata	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Mnemiopsis leidyi	1.96±1.74	1.24±1.05	0.09±0.29	0±0	0.61±0.54	0.71±0.91	1.32±1.24	0.49±0.88	0.20±0.39	8.74 ±8.68	0±0	0.20±0.47	1.88±3.32	2.75±2.23	3.28±2.04	5.79±2.73
Pleurobranchia pileus	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Aurelia aurita	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Cyanea capillata	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0

September 11, 2012

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Chrysaora quinquecirrha	0±0	0±0	0.37±0.45	0.05±0.18	0.04±140	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Beroe ovata	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Mnemiopsis leidyi	0.08±0.28	0±0	0±0	0±0	0.08±0.18	2.36±1.53	0±0	0.40±0.46	0.20±0.64	1.06 ±0.90	0±0	0.93±2.08	0.11±0.34	0.67±0.55	2.49±1.95	1.56±0.69
Pleurobranchia pileus	0±0	0±0	0±0	0±0	0±0	0.07±0.26	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Aurelia aurita	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0
Cyanea capillata	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0	0±0

Appendix B: Plankton Tows

June 1, 2012

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Mnemiopsis leidyi	0.67±1.15	1.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Harpactecoida	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	1.33±1.53	0.50±0.71	0.00±0.00	0.00±0.00
Cladocera	0.33±0.58	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	5.00±8.66	0.00±0.00	499.00±455.04	14.00±24.25
Fish Eggs	84±16.52	9.00±3.46	30.00±15.62	45.00±62.48	12.00±6.24	35.00±9.54	149.33±63.26	45.00±30.81	0.00±0.00	0.00±0.00	5.67±1.15	3.33±3.51	43.00±7.00	162.00±134.35	189.67±76.79	293.67±57.42
Brachyura	9.33±6.03	4.00±4.58	10.00±4.58	10.67±9.61	4.33±4.16	22.67±9.45	55.67±24.66	9.67±6.81	0.00±0.00	0.00±0.00	63.33±60.88	116.33±56.59	1590.33±719.49	185.00±250.32	5.67±5.51	521.00±192.74
Caridea	0.67±0.58	0.00±0.00	6.33±1.53	0.67±1.15	1.33±1.53	4.00±1.00	86.00±72.92	1.67±1.15	0.00±0.00	0.00±0.00	20.33±5.51	30.33±17.16	119.67±34.02	4.00±5.66	0.33±0.58	84.00±72.75
Polychaeta	0.33±0.58	0.00±0.00	0.67±1.15	0.33±0.58	0.33±0.58	0.00±0.00	0.33±0.58	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.33±0.58	0.00±0.00	3.67±3.51	1.33±1.53
Idotea baltica	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	2.67±1.53	1.00±1.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	55.33±48.64	0.00±0.00
Calanoida spp.	0.33±0.58	0.00±0.00	2.00±1.00	1.00±1.73	1.33±0.58	1.67±1.53	11.33±8.62	4.33±4.16	0.00±0.00	0.00±0.00	148.67±71.45	334.00±262.12	377.67±558.90	914.50±560.74	0.67±1.15	1344.33±520.47
Melitidae	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	2.00±2.00	5.00±3.61	0.00±0.00	0.67±1.15	0.33±0.58
Fish Larvae	0.00±0.00	1.00±1.73	0.00±0.00	0.00±0.00	0.33±0.58	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.67±1.53	1.67±0.58	3.00±2.00	1.50±0.71	3.00±3.46	3.67±3.21
Hydrobia totteni	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Insect Larvae	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Gelatinous Ephyra	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00
Unknown Egg Sack	0.00±0.00	0.00±0.00	0.67±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.33±2.31	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nauplii	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.33±1.53	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.67±1.15	0.33±0.58	0.50±0.71	0.00±0.00	0.00±0.00
Gammaridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.33±2.31	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	2.33±1.53	11.33±9.61	0.00±0.00	0.33±0.58	0.33±0.58
Erichsonella	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Lileborgiidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

Sygnathus fuscus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.00	0.00±0.00	0.00±0.00	0.00±0.00
Idotea phosphorea	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hydroid Medusae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ampithodae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	2.33±4.04	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nematoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hydroid Ephyrae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.50±0.71	0.00±0.00	0.33±0.58
Phoxocephalidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00
Ampeliscidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00
Atlantidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Cyathura polita	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aoridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ostracoda	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	14.67±25.40
Bittium alternatum	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Caprellidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Echinodermata Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hausteridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Littorina spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Adult Fish	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Bivalve Egg Sack	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Mitrella lunata	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Chrysaora quinquecirrha	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Cladonema spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Unknown Isopoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

Nudibranchia	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Balanus spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Corophidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Lysiianissidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Tanais cavolini	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Pycnogonida	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hippocampus erectus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Caligoidea spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Pteropoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Callinectes sapidus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Turritopsis nutricula	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Gastropoda spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Illyanassa spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aurelia aurita	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Obelia spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Foraminifera	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Diadumene lineata	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Limulus spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Eutima mira	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Clytia spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aequora spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Bougainvillea muscus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Mnemiopsis leidyi	1.00±1.73	0.67±1.15	11.0±16.52	11.0±19.05	3.67±2.89	30.67±26.86	14.00±20.88	19.33±26.56	25.0±25.0	0.00±0.00	23.33±20.21	3.67±6.35	1.50±2.12	2.33±4.04	0.67±1.15	1.00±1.00
Harpacticoida	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.33±0.58	1.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.33±0.58	0.00±0.00
Cladocera	2.67±4.62	10.67±15.89	0.33±0.58	0.00±0.00	0.00±0.00	0.67±0.15	0.33±0.58	2.00±2.00	3.00±5.20	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	16.67±28.87	7.33±12.70
Fish Eggs	36.67±34.08	56.33±43.98	94.33±62.12	155.67±11.72	26.67±23.63	36.33±43.13	3.33±3.06	37.00±12.12	34.33±20.79	196.00±49.87	15.00±2.65	116.00±22.34	8.50±10.61	269.33±96.24	54.67±49.66	886.33±559.29
Brachyura	24.33±29.37	30.33±52.54	15.67±9.61	5.00±3.61	10.67±1.53	6.00±7.94	16.33±9.29	30.00±19.08	77.67±38.48	65.00±54.56	33.33±45.21	39.33±15.57	72.50±82.73	190.00±248.51	127.67±41.31	440.00±690.66
Caridea	12.33±10.69	28.33±33.49	4.67±4.04	6.00±5.29	15.67±27.14	8.67±10.02	18.00±14.73	24.33±7.64	72.67±64.47	27.33±7.37	5.00±1.73	27.00±32.45	60.00±74.95	93.67±64.05	128.67±45.21	110.33±78.24
Polychaeta	0.00±0.00	0.33±0.58	2.00±3.46	1.00±1.73	1.00±1.73	0.00±0.00	1.33±1.53	0.33±0.58	0.00±0.00	0.33±0.58	0.00±0.00	1.00±1.73	3.50±0.71	0.33±0.58	0.33±0.58	0.67±1.15
Idotea baltica	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	2.00±2.65	1.33±1.15	8.00±2.65	0.00±0.00	1.33±0.58	0.67±0.58	5.00±7.07	0.67±1.15	1.33±2.31	1.00±1.73
Calanoida spp.	23.67±5.77	201.33±321.06	9.33±3.06	31.33±38.99	5.00±5.00	539.00±462.29	17.67±10.79	54.67±49.97	132.00±79.32	296.67±270.53	140.67±212.75	234.33±104.31	37.50±3.54	476.00±343.19	1067.00±550.82	2079.67±2597.09
Melitidae	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.73	1.33±0.58	0.00±0.00	1.00±1.00	2.33±2.31	1.00±1..00	8.33±2.08	10.00±11.31	18.00±12.17	12.33±7.57	1.33±1.15
Fish Larvae	0.00±0.00	3.67±6.35	0.00±0.00	1.67±1.15	0.67±0.58	33.33±55.16	2.33±2.08	0.00±0.00	0.00±0.00	0.67±0.58	1.67±1.33	14.33±13.58	0.00±0.00	2.67±1.53	7.67±2.08	45.00±38.22
Hydrobia totteni	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Insect Larvae	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Gelatinous Ephyra	0.00±0.00	0.00±0.00	1.00±1.73	3.67±3.21	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.50±0.71	0.67±1.15	0.00±0.00	0.00±0.00
Unknown Egg Sack	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nauplii	1.67±2.89	8.33±13.58	0.33±0.58	0.00±0.00	2.00±3.46	0.00±0.00	0.67±1.15	13.67±19.40	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Gammaridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	2.00±2.65	0.00±0.00	0.00±0.00	0.67±1.15	14.00±16.97	1.00±1.00	0.00±0.00	0.33±0.58
Erichsonella	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	1.50±2.12	0.00±0.00	1.00±1.73	0.00±0.00
Lileborgiidae	0.00±0.00	0.67±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	2.33±4.04	0.00±0.00	0.00±0.00
Sygnathus fuscus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	3.00±4.24	0.00±0.00	0.33±0.058	0.00±0.00
Idotea phosphorea	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.50±0.71	0.00±0.00	0.33±0.58	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Hydroid Medusae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ampithodae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	2.33±4.04	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nematoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hydroid Ephyrae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Phoxocephalidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.50±0.71	0.00±0.00	0.00±0.00	0.00±0.00
Ampeliscidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±0.1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Atlantidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15
Cyathura polita	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aoridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.67±2.08	1.50±2.12	0.33±0.58	0.00±0.00	0.00±0.00
Ostracoda	2.00±3.46	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	23.00±32.53	0.67±1.15	0.00±0.00	0.00±0.00
Bittium alternatum	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	50.50±71.42	0.00±0.00	0.00±0.00	0.00±0.00
Caprellidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	1.33±2.31	0.00±0.00
Echinodermata Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.50±0.71	0.00±0.00	0.00±0.00	0.00±0.00
Hausteridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.50±0.71	0.00±0.00	0.00±0.00	0.00±0.00
Littorina spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00
Adult Fish	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00
Bivalve Egg Sack	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Mitrella lunata	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00
Chrysaora quinquecirrha	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Cladonema spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Unknown Isopoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nudibranchia	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Balanus spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Corophidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Lysiianissidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Tanais cavolini	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Pycnogonida	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.50±0.71	0.00±0.00	0.00±0.00	0.00±0.00
Hippocampus erectus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Caligoidea spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Pteropoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Callinectes sapidus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Turritopsis nutricula	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Gastropoda spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Illyanassa spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aurelia aurita	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Obelia spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Foraminifera	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Diadumene lineata	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Limulus spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Eutima mira	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Clytia spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aequora spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Bougainvillea muscus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

June 26, 2012

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Mnemiopsis leidyi	0.00±0.00	1.67±1.15	0.67±0.58	0.00±0.00	22.00±14.00	5.33±5.77	83.33±28.87	6.00±6.00	9.67±5.69	19.33±14.01	0.00±0.00	0.00±0.00	0.00±0.00	9.00±15.59	0.00±0.00	46.00±44.14
Harpactechoida	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.67±1.53	0.00±0.00	0.67±0.58	0.00±0.00	0.33±0.58	0.00±0.00
Cladocera	44.67±35.02	7.00±2.65	0.00±0.00	2.00±2.65	0.00±0.00	1.00±1.00	1.67±2.89	2.00±2.65	26.00±45.03	1.00±1.73	0.33±0.58	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	3.00±5.20
Fish Eggs	80.67±12.50	60.33±57.05	96.33±6.43	57.00±5.29	135.33±66.12	47.33±17.56	26.00±4.36	9.33±3.79	83.67±19.55	4.67±5.69	13.33±2.08	59.00±26.00	2.00±1.00	16.00±4.36	103.67±49.90	160.00±98.15
Brachyura	71.33±14.57	19.00±16.09	38.00±15.10	123.33±86.41	47.00±16.70	9.00±7.21	16.00±8.19	7.67±4.04	158.00±85.51	2.00±2.65	82.00±37.99	394.00±225.06	104.00±35.51	2313.33±1185.94	339.33±235.97	632.33±544.55
Caridea	143.67±37.65	37.00±21.38	20.67±4.51	32.33±20.13	10.00±4.36	3.33±4.93	30.33±28.73	11.00±2.00	344.67±203.82	0.67±1.15	52.67±22.59	24.33±10.50	101.67±59.87	24.33±8.74	79.00±33.87	73.67±9.87
Polychaeta	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.33±0.58	1.67±2.89	1.67±2.89	0.00±0.00	0.00±0.00	0.67±1.15
Idotea baltica	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	2.67±4.62	0.67±0.58	0.00±0.00	6.33±4.16	0.00±0.00
Calanoida spp.	996.33±698.57	132.33±65.45	1392.67±1025.91	326.33±319.80	29.00±33.87	659.33±390.05	0.67±1.15	36.33±24.44	264.33±106.57	11.67±11.24	333.33±180.69	1527.00±2159.28	52.33±9.87	163.33±152.72	1065.33±1671.74	2108.00±1702.31
Melitidae	0.00±0.00	1.00±1.73	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	1.00±1.00	0.00±0.00	0.67±1.15	0.67±1.15	3.67±3.06	1.33±2.31	12.33±16.44	0.00±0.00
Fish Larvae	1.00±1.00	0.00±0.00	0.33±0.58	0.67±0.58	1.33±1.15	0.67±0.58	0.33±0.58	0.00±0.00	1.67±2.08	0.00±0.00	1.00±1.73	3.67±2.52	0.67±1.15	7.33±2.08	9.33±3.79	5.67±5.03
Hydrobia totteni	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Insect Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00
Gelatinous Ephyra	0.33±0.58	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Unknown Egg Sack	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nauplii	2.67±2.52	1.00±1.73	6.00±2.00	2.67±1.53	3.00±5.20	1.33±2.31	0.67±1.15	1.33±1.53	0.33±0.58	0.00±0.00	0.67±1.15	1.00±1.73	0.00±0.00	0.00±0.00	1.00±1.73	0.00±0.00
Gammaridae	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	1.00±1.00	0.00±0.00	4.33±5.13	0.00±0.00
Erichsonella	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Lileborgiidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Syngnathus fuscus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±0.58	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Idotea phosphorea	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00
Hydroid Medusae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.73	0.00±0.00	0.00±0.00
Ampithodae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nematoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hydroid Ephyrae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Phoxocephalidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00
Ampeliscidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Atlantidae	1.33±2.31	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	1.67±2.89	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.73
Cyathura polita	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aoridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ostracoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	2.67±3.79	18.00±24.58	0.00±0.00	0.00±0.00	0.33±0.58	1.33±1.53	0.00±0.00	0.00±0.00	0.00±0.00
Bittium alternatum	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00
Caprellidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	2.00±1.73	0.00±0.00
Echinodermata Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.50±0.71	0.00±0.00	0.00±0.00	0.00±0.00
Hausteridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Littorina spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Adult Fish	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Bivalve Egg Sack	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Mitrella lunata	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Chrysaora quinquecirrha	0.00±0.00	0.00±0.00	1.33±0.58	1.00±1.00	0.00±0.00	0.67±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Cladonema spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Unknown Isopoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00
Nudibranchia	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Balanus spp. Larvae	0.00±0.00	0.00±0.00	2.00±3.46	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Corophidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Lysiianissidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Tanais cavolini	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Pycnogonida	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hippocampus erectus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Caligoidea spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Pteropoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Callinectes sapidus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Turritopsis nutricula	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58
Gastropoda spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Illyanassa spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aurelia aurita	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Obelia spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Foraminifera	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Diadumene lineata	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Limulus spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Eutima mira	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Clytia spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aequora spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Bougainvillea muscus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

July 12, 2012

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Mnemiopsis leidyi	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	45.00±13.23	46.33±4.04	40.00±52.92	19.67±10.50	98.67±5.51	190.00±52.92	8.00±2.65	21.67±14.43	35.00±21.79	131.67±7.64
Harpactechoida	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	3.00±4.36	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Cladocera	3.00±3.61	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.33±2.31	0.67±1.15	0.00±0.00	0.33±0.58	0.00±0.00	3.33±4.93	0.00±0.00	0.00±0.00
Fish Eggs	23.33±5.51	17.33±9.29	83.33±9.29	34.67±36.69	19.67±8.08	0.33±0.58	64.00±15.62	71.33±9.24	36.33±13.05	36.33±14.64	1.67±0.58	19.00±8.72	1.67±1.53	7.00±12.12	8.67±5.69	0.33±0.58
Brachyura	33.67±24.09	19.00±9.54	4.00±2.65	2.33±2.52	2.67±3.79	1.33±1.53	1.67±0.58	8.00±6.08	9.33±10.21	3.67±2.08	1.33±0.58	1.33±2.51	15.33±4.51	15.00±10.82	4.33±4.93	7.00±5.29
Caridea	86.00±104.10	63.67±36.90	1.33±1.53	2.33±4.04	5.33±5.13	1.00±1.00	128.67±75.04	5.67±3.51	3.67±1.15	3.33±2.31	4.33±4.93	5.33±8.39	6.67±3.79	17.67±9.61	8.33±10.12	5.33±3.79
Polychaeta	0.00±0.00	0.00±0.00	1.33±0.58	1.67±2.89	1.67±2.89	0.67±0.58	0.67±0.58	0.00±0.00	18.67±27.21	1.00±1.00	0.00±0.00	0.67±1.15	0.33±0.58	2.33±404	0.00±0.00	0.33±0.58
Idotea baltica	0.00±0.00	0.67±1.15	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	3.67±2.08	1.33±1.15	11.00±8.66	0.33±0.58	0.00±0.00	0.67±0.58	8.67±8.96	2.00±1.00	12.00±11.53	2.67±0.58
Calanoida spp.	459.67±316.50	224.33±126.72	7.33±5.51	3.00±1.00	3.00±3.61	49.33±77.67	2.33±2.08	1.00±1.00	6.00±8.72	7.67±1.53	2.00±3.46	3.67±2.52	2.00±1.73	52.33±49.54	2.00±1.00	0.67±0.58
Melitidae	0.00±0.00	0.33±0.58	2.00±2.65	0.33±0.58	0.00±0.00	1.33±1.53	1.67±0.58	8.00±6.08	9.33±10.21	3.67±2.08	1.33±0.58	1.33±2.31	15.33±4.51	15.00±10.82	4.33±4.93	7.00±5.29
Fish Larvae	0.00±0.00	0.00±0.00	0.33±0.58	0.33±0.58	0.33±0.58	0.00±0.00	0.33±0.58	0.33±0.58	0.00±0.00	5.00±5.57	0.00±0.00	2.00±3.46	0.00±0.00	0.67±1.15	0.00±0.00	1.00±1.73
Hydrobia totteni	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Insect Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Gelatinous Ephyra	8.00±4.36	1.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00
Unknown Egg Sack	0.00±0.00	0.00±0.00	4.00±6.93	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00
Nauplii	8.33±11.15	0.00±0.00	0.00±0.00	2.67±3.79	1.33±1.53	0.00±0.00	0.00±0.00	0.00±0.00	1.67±2.08	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	1.67±2.89	1.00±1.00	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Gammaridae	0.00±0.00	0.00±0.00	6.00±3.61	2.33±4.04	0.67±0.58	0.00±0.00	0.67±1.15	0.00±0.00	3.00±5.20	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	5.67±5.69	0.00±0.00	9.67±8.62
Erichsonella	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.67±2.89	0.00±0.00	0.00±0.00	0.00±0.00	3.00±5.20	0.00±0.00	6.67±11.55	0.00±0.00
Lileborgiidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	2.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00
Sygnathus fuscus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Idotea phosphorea	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hydroid Medusae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ampithodae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	2.33±4.04	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nematoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hydroid Ephyrae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Phoxocephalidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ampeliscidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Atlantidae	0.67±1.15	0.00±0.00	1.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00
Cyathura polita	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aoridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	3.67±5.51	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ostracoda	0.00±0.00	0.00±0.00	3.33±3.06	3.33±5.77	0.33±0.58	0.00±0.00	0.67±1.15	0.00±0.00	9.67±10.02	0.33±0.58	0.00±0.00	0.00±0.00	1.67±2.08	0.00±0.00	0.33±0.58	0.00±0.00
Bittium alternatum	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00
Caprellidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	4.33±2.31	0.00±0.00	0.33±0.58	0.67±1.15	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00
Echinodermata Larvae	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hausteridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Littorina spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Adult Fish	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Bivalve Egg Sack	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Mitrella lunata	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Chrysaora quinquecirrha	2.33±0.58	1.00±1.73	0.67±1.15	0.33±0.58	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58
Cladonema spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Unknown Isopoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nudibranchia	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Balanus spp. Larvae	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Corophidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Lysiianissidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Tanais cavolini	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Pycnogonida	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	2.00±2.65	0.33±0.58	0.33±0.58	0.00±0.00
Hippocampus erectus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00
Caligoidea spp.	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Pteropoda	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Callinectes sapidus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Turritopsis nutricula	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58
Gastropoda spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Illyanassa spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aurelia aurita	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Obelia spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Foraminifera	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Diadumene lineata	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Limulus spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Eutima mira	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Clytia spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aequora spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Bougainvillea muscus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

July 30, 2012

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Mnemiopsis leidyi	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.67±2.89	3.67±1.53	17.33±8.62	6.00±5.29	4.00±4.00	11.33±4.04	4.00±5.29	9.33±3.06	58.67±88.12	0.00±0.00	72.67±64.93	41.00±13.89
Harpactechoida	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Cladocera	1.33±0.58	1.00±1.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	11.33±10.02	0.00±0.00	0.33±0.58	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.67±1.15
Fish Eggs	1.67±1.53	5.67±0.58	2.33±4.04	0.67±0.58	7.67±6.35	2.33±2.31	0.00±0.00	0.00±0.00	1.67±1.53	0.00±0.00	1.33±1.53	4.00±1.00	1.33±1.15	4.67±5.69	0.33±0.59	0.00±0.00
Brachyura	42.33±12.22	19.33±14.57	8.67±11.59	9.67±4.16	9.67±7.57	0.67±0.58	15.33±11.59	870.33±559.13	72.00±53.11	15.67±14.57	8.33±7.37	1589.67±882.18	71.33±10.60	752927.33±571351.35	110.00±35.38	5023.00±3497.29
Caridea	52.33±26.50	73.33±75.18	10.67±0.58	2.00±1.73	8.00±0.00	0.00±0.00	20.67±4.93	6.67±5.69	41.33±27.15	31.33±5.03	23.00±7.81	47.33±9.61	4.00±3.00	16.33±16.01	80.67±68.65	12.00±5.57
Polychaeta	0.33±0.58	0.00±0.00	2.33±1.53	0.00±0.00	1.33±2.31	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	3.00±5.20	0.33±0.58	0.00±0.00	3.67±3.21	0.00±0.00	0.33±0.58
Idotea baltica	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	17.33±15.28	0.00±0.00	0.67±0.58	2.67±1.53	0.00±0.00	0.33±0.58	2.00±2.00
Calanoida spp.	131.67±43.78	181.67±133.54	11.00±7.55	1.67±1.53	17.67±14.57	2.67±1.53	5.33±2.08	4.33±0.58	5.33±1.15	7.33±1.15	7.67±10.02	48.33±18.15	9.67±16.74	1365.33±987.75	10.67±7.09	3.00±1.73
Melitidae	0.00±0.00	0.00±0.00	1.67±2.08	0.00±0.00	4.67±7.23	0.00±0.00	4.33±6.66	0.00±0.00	0.00±0.00	21.33±33.50	1.67±2.89	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	5.33±4.73
Fish Larvae	0.00±0.00	0.33±0.58	0.00±0.00	1.33±1.53	0.33±0.58	0.00±0.00	0.00±0.00	0.67±0.58	0.33±0.58	1.00±1.73	0.00±0.00	0.00±0.00	0.67±1.15	0.67±1.15	1.00±1.73	0.00±0.00
Hydrobia totteni	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Insect Larvae	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Gelatinous Ephyra	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.00	0.67±1.15	0.00±0.00	0.33±0.58	1.67±2.89	4.67±6.43	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00
Unknown Egg Sack	0.00±0.00	0.00±0.00	1.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00
Nauplii	2.00±1.00	0.33±0.58	0.33±0.58	5.33±4.73	1.33±2.31	1.00±1.00	0.00±0.00	0.33±0.58	1.33±1.53	0.33±0.58	0.00±0.00	3.00±5.20	4.67±8.08	0.33±0.58	0.00±0.00	0.00±0.00
Gammaridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	4.33±5.86	3.67±6.35	7.33±8.08

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Erichsonella	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58
Lileborgiidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Sygnathus fuscus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Idotea phosphorea	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hydroid Medusae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ampithodae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nematoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hydroid Ephyrae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Phoxocephalidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ampeliscidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Atlantidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Cyathura polita	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aoridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ostracoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Bittium alternatum	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Caprellidae	0.00±0.00	0.00±0.00	3.67±4.04	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.33±0.58	0.00±0.00	0.00±0.00
Echinodermata Larvae	0.00±0.00	0.00±0.00	1.33±2.31	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hausteridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Littorina spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Adult Fish	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Bivalve Egg Sack	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Mitrella lunata	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Chrysaora quinquecirrha	0.33±0.58	0.00±0.00	1.67±2.08	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Cladonema spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Unknown Isopoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nudibranchia	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Balanus spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Corophidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Lysiianissidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58
Tanais cavolini	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Pycnogonida	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hippocampus erectus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Caligoidea spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Pteropoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Callinectes sapidus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Turritopsis nutricula	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.33±2.31	0.00±0.00
Gastropoda spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.33±2.31	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Illyanassa spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	2.00±3.46	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aurelia aurita	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00
Obelia spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Foraminifera	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Diadumene lineata	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Limulus spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Eutima mira	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00
Clytia spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aequora spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Bougainvillea muscus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

August 8, 2012

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Mnemiopsis leidyi	0.00±0.00	3.67±3.06	0.00±0.00	0.67±1.15	19.33±23.16	1.00±1.73	0.00±0.00	9.67±11.24	1.33±2.31	37.67±23.69	9.33±1.15	12.33±4.62	35.00±15.00	11.67±7.23	291.67±87.80	286.33±100.55
Harpactechoida	1.00±1.73	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.00	0.33±0.58	0.00±0.00	0.33±0.58	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Cladocera	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Fish Eggs	0.00±0.00	0.00±0.00	0.33±0.58	1.33±1.15	0.00±0.00	0.33±0.58	0.67±0.58	0.33±0.58	3.00±3.00	0.00±0.00	1.00±0.00	1.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00
Brachyura	2.67±2.31	0.67±1.15	1.67±2.89	0.00±0.00	0.33±0.58	0.33±0.58	12.00±4.36	3.67±3.06	16.00±24.33	0.67±1.15	3.67±4.04	26.00±23.58	2.33±0.58	0.33±0.58	0.00±0.00	0.33±0.58
Caridea	18.67±11.02	2.33±1.53	3.67±6.35	0.33±0.58	0.67±0.58	0.00±0.00	24.67±7.23	8.33±12.74	0.67±1.15	2.33±1.53	10.00±2.65	35.67±11.85	12.33±11.85	0.00±0.00	0.67±0.58	2.67±2.52
Polychaeta	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	4.67±4.04	1.00±1.73	2.67±2.08	0.00±0.00	0.00±0.00	0.33±0.58	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00
Idotea baltica	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	4.00±1.00	2.33±4.04	14.00±15.10	0.00±0.00	0.00±0.00	0.00±0.00	1.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00
Calanoida spp.	0.33±0.58	4.67±7.23	1.00±1.73	0.33±0.58	0.00±0.00	3.33±3.51	3.33±3.51	2.33±2.52	5.00±7.00	0.67±1.15	0.00±0.00	8.00±6.24	0.33±0.58	0.00±0.00	1.00±1.00	0.33±0.58
Melitidae	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	4.67±4.16	0.33±0.58	14.00±6.93	0.00±0.00	0.00±0.00	2.00±3.46	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00
Fish Larvae	0.00±0.00	0.33±0.58	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hydrobia totteni	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Insect Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Gelatinous Ephyra	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.33±0.58	0.00±0.00	7.00±12.12	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Unknown Egg Sack	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nauplii	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	5.67±9.81	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Gammaridae	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	2.33±2.31	0.00±0.00	2.00±1.00	8.00±13.00	5.67±8.14	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Erichsonella	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Lileborgiidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00
Sygnathus fuscus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Idotea phosphorea	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hydroid Medusae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ampithodae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nematoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hydroid Ephyrae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Phoxocephalidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ampeliscidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.33±2.31	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Atlantidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Cyathura polita	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aoridae	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	1.00±1.00	0.00±0.00	0.00±0.00	0.33±0.58	1.67±2.89	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ostracoda	0.33±0.58	0.00±0.00	1.00±1.00	0.33±0.58	0.00±0.00	0.33±0.58	0.67±0.58	0.00±0.00	1.33±1.53	0.00±0.00	0.00±0.00	0.67±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Bittium alternatum	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.33±2.31	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Caprellidae	0.00±0.00	0.00±0.00	1.67±2.08	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.73	21.33±34.36	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00
Echinodermata Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	3.00±5.20	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hausteridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Littorina spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Adult Fish	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Bivalve Egg Sack	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Mitrella lunata	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Chrysaora quinquecirrha	0.33±0.58	0.00±0.00	0.67±0.58	2.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.33±0.58	0.00±0.00
Cladonema spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Unknown Isopoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nudibranchia	0.00±0.00	0.00±0.00	2.00±3.46	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Balanus spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Corophidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Lysiianissidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Tanais cavolini	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Pycnogonida	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	2.00±1.00	0.00±0.00	3.00±3.61	0.00±0.00	0.33±0.58	0.67±0.58	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00
Hippocampus erectus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Caligoidea spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Pteropoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Callinectes sapidus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Turritopsis nutricula	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.67±1.15	0.00±0.00	2.67±2.31	0.33±0.58	18.00±26.15	7.00±0.00	3.00±3.61	0.67±1.15	1.33±1.53	0.00±0.00
Gastropoda spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Illyanassa spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aurelia aurita	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Obelia spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.67±0.58	0.00±0.00
Foraminifera	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Diadumene lineata	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Limulus spp. Larvae	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Eutima mira	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.67±0.58	0.00±0.00
Clytia spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.67±2.08	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aequora spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Bougainvillea muscus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

August 22, 2012

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Mnemiopsis leidyi	23.00±10.82	49.00±6.56	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.73	41.00±1.41	6.00±3.61	6.33±2.89	12.33±2.52	0.67±0.58	4.00±5.20	21.67±5.77	24.00±6.93	25.67±14.01	66.67±17.56
Harpactechoida	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Cladocera	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	1.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Fish Eggs	1.67±1.53	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	1.67±1.15	0.00±0.00	0.00±0.00	0.67±0.58	0.67±0.58	0.00±0.00
Brachyura	11.67±10.60	0.33±0.58	8.67±5.51	0.33±0.58	2.00±2.00	1.33±0.58	2.00±1.41	6.00±6.24	5.67±5.69	1.00±1.73	2.00±1.00	134.00±45.40	3.00±2.65	61.67±53.46	1.33±1.53	0.00±0.00
Caridea	8.33±2.31	0.67±0.58	5.33±0.58	0.00±0.00	2.67±2.08	0.00±0.00	0.50±0.71	2.00±2.65	0.67±0.58	1.33±2.31	48.67±8.14	37.33±5.03	3.67±2.52	12.67±11.02	9.00±7.21	2.00±2.00
Polychaeta	0.00±0.00	0.00±0.00	1.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.41	0.67±1.15	0.67±1.15	3.00±2.00	0.33±0.58	4.67±4.04	2.33±2.52	0.00±0.00	0.33±0.58	0.00±0.00
Idotea baltica	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.50±0.71	0.00±0.00	1.00±1.73	0.33±0.58	0.00±0.00	0.00±0.00	1.00±1.00	0.00±0.00	0.00±0.00	0.00±0.00
Calanoida spp.	2.00±2.00	0.00±0.00	0.33±0.58	0.67±0.58	0.33±0.58	0.67±0.58	0.00±0.00	1.33±1.53	0.67±1.15	0.00±0.00	1.67±2.89	48.00±19.29	0.33±0.58	0.67±1.15	10.00±9.54	0.00±0.00
Melitidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.00	0.00±0.00
Fish Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.33±0.58	5.00±4.58	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00
Hydrobia totteni	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Insect Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Gelatinous Ephyra	0.33±0.58	0.00±0.00	0.33±0.58	0.33±0.58	0.00±0.00	0.00±0.00	2.50±3.54	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±1.73	0.00±0.00	0.00±0.00	0.00±0.00
Unknown Egg Sack	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nauplii	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Gammaridae	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.67±0.58	0.00±0.00	0.50±0.74	0.00±0.00	1.00±2.3	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	3.00±4.36	0.00±0.00
Erichsonella	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Lileborgiidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00
Sygnathus fuscus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Idotea phosphorea	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hydroid Medusae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ampithodae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nematoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hydroid Ephyrae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Phoxocephalidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ampeliscidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Atlantidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Cyathura polita	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aoridae	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ostracoda	4.33±30.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.50±0.71	0.00±0.00	0.67±1.15	0.00±0.00	0.67±0.58	2.33±1.53	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00
Bittium alternatum	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Caprellidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00
Echinodermata Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hausteridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Littorina spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Adult Fish	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Bivalve Egg Sack	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Mitrella lunata	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Chrysaora quinquecirrha	0.00±0.00	0.00±0.00	0.67±0.58	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00
Cladonema spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Unknown Isopoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nudibranchia	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Balanus spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Corophidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Lysiianissidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Tanais cavolini	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Pycnogonida	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.33±0.58	0.00±0.00	0.67±1.15	0.00±0.00	1.33±2.31	0.00±0.00
Hippocampus erectus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Caligoidea spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Pteropoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Callinectes sapidus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Turritopsis nutricula	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	23.67±31.50	9.67±5.69	2.33±4.04	2.33±2.52	0.33±0.58	0.00±0.00
Gastropoda spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Illyanassa spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aurelia aurita	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Obelia spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Foraminifera	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Diadumene lineata	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Limulus spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Eutima mira	0.00±0.00	0.00±0.00	0.00±0.00	0.67±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	1.00±1.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00
Clytia spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.33±2.31	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Aequora spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00
Bougainvillea muscus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00

September 11, 2012

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Mnemiopsis leidyi	0.00± 0.00	0.00± 0.00	0.33± 0.58	0.00± 0.00	2.00± 1.73	0.33± 0.58	1.00±1.41	5.67±4.93	3.33±1.53	12.67±9.24	2.33±2.08	2.67±2.08	3.67±0.58	18.33±2.89	15.00±5.00	23.33±7.64
Harpactechoida	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.33±0.58	0.67±0.58	3.00±2.00	1.33±2.31
Cladocera	0.00± 0.00	0.33± 0.58	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	1.50±2.12	0.33±0.58	0.00±0.00	0.00±0.00	10.00±17.32	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Fish Eggs	0.00± 0.00	0.00± 0.00	0.33± 0.58	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	7.33±11.85	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58
Brachyura	0.33± 0.58	0.33± 0.58	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.50±0.71	1.33±2.31	13.00±5.20	0.00±0.00	5.33±2.52	8.33±10.97	7.67±5.03	5.67±1.53	23.00±13.23	2.33±1.15
Caridea	2.67± 0.58	1.67± 1.53	3.33± 3.06	0.00± 0.00	0.67± 1.15	1.00± 1.00	1.00±1.41	0.33±0.58	82.67±29.48	29.67±0.58	27.00±17.69	72.00±29.60	112.33± 49.86	34.33±10.97	93.67±60.70	87.67±66.71
Polychaeta	0.67± 1.15	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	1.67±0.58	0.33±0.58	1.67±2.08	0.33±0.58	2.33±2.52	0.00±0.00
Idotea baltica	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Calanoida spp.	7.33± 1.53	1.00± 0.00	0.33± 0.58	0.00± 0.00	2.33± 3.21	3.67± 3.06	28.00± 4.24	87.67±124.36	258.00±191.16	64.00±14.18	111.67± 91.50	781.33±218.50	219.67± 56.08	713.33±391.58	3923.33±2063.63	72.00±45.08
Melitidae	3.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Fish Larvae	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.33±0.58	0.33±0.58	1.00±1.00	0.00±0.00
Hydrobia totteni	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Insect Larvae	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Gelatinous Ephyra	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.50±0.71	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00	0.00±0.00	0.67±1.15
Unknown Egg Sack	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nauplii	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Gammaridae	0.00± 0.00	0.00± 0.00	1.33± 1.53	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	1.00±1.73	0.33±0.58	0.33±0.58	0.00±0.00	2.33±2.52	0.00±0.00
Erichsonella	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00± 0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Lileborgiidae	0.33±0.58	0.00±0.00	0.33±0.58	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Sygnathus fuscus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Idotea phosphorea	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hydroid Medusae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ampithodae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nematoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hydroid Ephyrae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Phoxocephalidae	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ampeliscidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Atlantidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Cyathura polita	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aoridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Ostracoda	0.00±0.00	0.67±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	9.50±13.44	0.00±0.00	9.00±1.73	0.33±0.58	2.00±3.46	2.00±2.00	0.67±1.15	1.33±2.31	2.67±2.89	0.00±0.00
Bittium alternatum	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Caprellidae	1.33±2.31	0.00±0.00	1.00±1.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.67±1.15	0.00±0.00
Echinodermata Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Hausteridae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Littorina spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58
Adult Fish	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Bivalve Egg Sack	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Mitrella lunata	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Chrysaora quinquecirrha	0.00±0.00	0.00±0.00	1.67±2.08	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Cladonema spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Unknown Isopoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Nudibranchia	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Balanus spp. Larvae	0.00±0.00	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Corophidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Lysiianissidae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Tanais cavolini	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Pycnogonida	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	1.00±1.00	1.00±1.00	3.00±3.00	0.33±0.58	0.00±0.00	0.33±0.58
Hippocampus erectus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Caligoidea spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Pteropoda	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Callinectes sapidus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Turritopsis nutricula	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	1.50±0.71	0.33±0.58	0.67±0.58	3.67±6.35	34.00±12.49	37.67±9.50	53.67±15.37	14.67±5.51	1.33±1.53	1.33±1.53
Gastropoda spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Illyanassa spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aurelia aurita	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Obelia spp.	0.33±0.58	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Foraminifera	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Diadumene lineata	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Limulus spp. Larvae	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Eutima mira	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58	0.00±0.00	1.00±1.00	0.00±0.00	1.33±1.58	0.33±0.58	0.67±0.58	0.67±1.15	0.00±0.00

	ME	MW	SBE	SBW	TRE	TRW	FRE	FRW	DCE	DCW	HCE	HCW	WE	WW	TE	TW
Clytia spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Aequora spp.	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00
Bougainvillea muscus	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.00±0.00	0.33±0.58